TOA

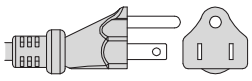
PRODUCTS LINEUP CATALOG

2013-2014

SOUND & COMMUNICATION

Contents

Voice Evacuation Systems 2
Amplifiers 9
Digital Power Amplifiers 28
Mixers 31
Signal Processing Equipment 39
Network-Related Systems 42
Rack Mount Equipment and Others 44
Commercial Sound Speakers 46
Pro-Sound Speakers 55
Conference Systems 73
Wireless Microphone Systems 81
Wired Microphones 93
Megaphones 95
IP Network Intercoms 100
Classroom System Packages 113
House of Worship System Packages 114
Speaker Mounting Accessories Set-Up Chart 115
Amplifier Selection Guide 121
List of UL-Certified Models 122
IP Grade Panel 124
Index 125

Appearance of AC Plug and Voltage	Name of Version
 100 – 120V AC	**CU** **314L** **US** **UL** **120** **L**

Voice Evacuation Systems

SX-2000 Series

Introducing a scalable new system for configuring versatile and highly effective PA applications. The **SX-2000 Series** is in compliance with the EN 54 Standard, and features new matrixing capabilities, so a single system can have its components distributed in different locations, yet under centralized control. Ideal for large-scale installations ranging over multiple buildings as well as local systems, the versatile SX-2000 Series is particularly well-suited for airports and railway stations, factories, shopping malls and large offices. Versatility is ensured by such features as a dual power source and redundant backups for fail-safe operation, making it a cost-effective solution for virtually any installation, and without long lead times or the expense of a custom system. A fireman's microphone feature is also included, for enhanced effectiveness in an emergency. SX-2000 Series components enable creation of an ideal system for all sorts of application requirements.

SX-2000SM
System Manager

Power Source: Usable power supply unit: VX-200PS/24V DC (operational range: 20V – 40V DC)/Two power inputs construction enables dual- redundant power supply.
Current Consumption: 1.1A or less (maximum value in the power operating range)/
0.8A or less (when operated on 24V DC)
Indication/Operation: SX link access indicator: 2/LAN access indicator: 1/Mode indicator: 3 (EMERGENCY/STANDBY/CPU OFF)/Failure indicator: 3 (GENERAL/CPU/SX LINK)/Power indicator: 1 (POWER)/Run indicator: 1 (RUN)/Failure control switch: 3 (ACK/RESET/LAMP TEST)
SX Link:
Network I/F: 2 100BASE-TX circuits, RJ45 connector
Matrix System Specification: Bus: 16/Audio input: Max. 64 ch/Audio output: Max. 128 zones/Contact input: Max. 1,416/Contact output: Max. 1,416/Priority control: 512 steps/Event log: Up to 1,000 logs per file (up to 100 files available)/Failure log: Up to 100 logs per file (up to 100 files available)
Matrix System Configuration:
Connectable SX-2100AI No: Max. 8 units/Connectable SX-2000AO/2100AO No.: Max. 32 units/Connectable SX-2000CI No.: Max. 32 units//Connectable SX-2000CO No.: Max. 32 units/Connectable RM-200SA/SF No.: Max. 64 units (up to 4 RM-200SA per SX-2100AI)
Connection Cable/Device:
Shielded Category 5 twisted pair cable for LAN (CAT5-STP) (Connect SX-2100AI and SX-2000AO/2100AO via the switching hub specified by TOA)
Note: This network must be made completely independent from other LAN.
Number of Cascaded Switching Hub: Up to 7
Maximum Cable Distance:100m (between this unit and a Number of Switching hubs, or between Number of Cascaded Switching Hubs)
LAN:
Network I/F: 1 10 BASE-T/100 BASE-TX circuit (selectable by automatic recognition), RJ45 connector for maintenance use
Network Protocol: TCP/IP
Connection Cable: Shielded Category 5 twisted pair cable for LAN (CAT5-STP)
Maximum Cable Distance: 328ft (between this unit and a switching hub or PC)
Analog Link:
Input/Output Connector: Output: 2, RJ45 connector
Connection Cable: Shielded Category 5 twisted pair cable for LAN (CAT5-STP) (1 pair of audio wire + 1 pair of CPU OFF + 1 pair of control wire (system reset/standby) + 1 pair of connection check wire)
Maximum Cable Distance: Total length of analog audio link: 2625ft
DS Link:
Usable Unit: VX-2000DS
Connector/Cable: 2 interface, RJ45 Connector, Shielded Category 5 twisted pair cable (CAT5-STP)
Maximum Cable Distance: 16ft
Failure Data Input: 3 inputs (ACK/RESET/LAMP TEST), no-voltage make contact input, open voltage: 24V DC, short-circuit current: 2mA, photo coupler input, removable terminal block (12 pins)
Failure Data Output: 4 outputs (CPU FAULT/GENERAL FAULT/CPU OFF/BUZZER), C contact, no-voltage make contact output, relay contact output (withstand voltage: 40V DC, control current: 2 – 300mA), RJ45 connector
Control Input: 8 inputs, no-voltage make contact input, open voltage: 24V DC, short-circuit current: 2mA, photo coupler input, removable terminal block (12 pins)
Surveillance Section for The Control Input Lines: Connection resistance to make the function inactive: 20kΩ ±5%/Connection resistance to make the function active: 10kΩ ±5%/Connector cable: Twisted pair cable (shielded type is recommended)/Maximum cable distance: 33ft
Control Output: 8 outputs, C contact, no-voltage make contact output, relay contact output (withstand voltage: 40V DC, control current: 2 – 300mA), removable terminal block (12 pins)
24V DC Output:
Output Voltage: 24V DC ±10% or less
Maximum Feeding Current: 100mA
Memory Card: Insertion slot: 1 (use of supplied CF card (128MB)), set data and log data stored
Operating Temperature: 32°F to +104°F
Operating Humidity: 35% to 80% RH (no condensation)
Finish: Panel: Aluminum, black, alumite,
Case: Surface-treated steel plate
Dimensions: 19 (W) × 1.7 (H) × 13 (D)in
Weight: 8.4lbs
Accessory: CD (PC setting software) × 1, EV-CF128M (CF card) × 1, Removable terminal plug (4 pins) × 1, Removable terminal plug (12 pins) × 4, Rack mounting screw × 4, Driver × 1

SX-2100AI
Audio Input Unit

Power Source: Usable power supply unit: VX-200PS/24V DC (operational range: 20V – 40V DC)/Two power inputs construction enables dual- redundant power supply.
Current Consumption: 2.01A or less (maximum value in the power operating range)/
1.50A or less (when operated on 24V DC)
Note: But except current consumption of the external equipment of which power is supplied from the unit.
Indication: 18 alphanumeric characters, Level indication (8 inputs, monitor), Status indicators, Power indicator, Standby indicator, CPU OFF indicator
Operation: Function button, Input level control, Monitor speaker volume control, ON/OFF switch, Operation button
Audio Input: 8 inputs, module construction (max. 4 modules, modules optional) monitoring possible using built-in speaker.
Audio Input Characteristic: Sampling frequency: 48kHz
No. of Connectable Remote Microphone: Max. 8
Power Feed to Remote Microphone: Possible for up to a total of 8A.
SX Link:
Network I/F: 2 100BASE-TX circuits, RJ45 connector, decentralized installation possible
Connection Cable/Device: Shielded Category 5 twisted pair cable for LAN (CAT5-STP)
To be connected via the switching hub specified by TOA.
Note: This network must be made completely independent from other LAN.
Maximum Cable Distance: 328ft (between this unit and a switching hub)
Analog Link:
Input/Output Connector: Input: 1 input, RJ45 connector/Output: 1 output, RJ45 connector
Connection Cable: Shielded Category 5 twisted pair cable for LAN (CAT5-STP) (1 pair of audio wire + 1 pair of CPU OFF + 1 pair of control wire (system reset/standby) + 1 pair of connection check wire)
Maximum Cable Distance: Total length of analog audio link: 2625ft
Control Input: 16 inputs, no-voltage make contact input, open voltage: 40V DC or less, short-circuit current: 2mA, photo coupler input, removable terminal block (16 pins)
Control Output: 16 outputs, A contact: normally open (changeable to B contact: normally closed), no-voltage make contact output, relay contact output (withstand voltage: 40V DC, control current: 2 – 300mA), removable terminal block (16 pins)
Operating Temperature: 32°F to +104°F
Operating Humidity: 35% to 80% RH (no condensation)
Finish: Panel: Aluminum, black, alumite,
Case: Surface-treated steel plate
Dimensions: 19 (W) × 3.5 (H) × 13.7 (D)in
Weight: 16lbs
Accessory: Removable terminal plug (4 pins) × 1, Removable terminal plug (16 pins) × 2, Rack mounting screw × 4
Option: Remote microphone interface module: SX-200RM
MIC/LINE input module: D-921E, D-921F, D-922E, D-922F
Stereo input module: D-936R
Note: Modules other than described above cannot be used.

SX-2100AO
Audio Output Unit

Power Source: Usable power supply unit: VX-200PS/ 24V DC (operational range: 20V – 40V DC)/Two power inputs construction enables dual- redundant power supply.
Current Consumption: 1.7A or less (maximum value in the power operating range)/ 1.2A or less (when operated on 24V DC)
Note: But except current consumption of the external equipment of which power is supplied from the unit.
Indication: 18 alphanumeric characters, Level indication (8 outputs, monitor), Status indicators, Power indicator, Standby indicator, CPU OFF indicator
Operation: Function button, Output level control, Monitor speaker volume control, ON/OFF switch, Operation button
PA Link:
Audio Output: 8 outputs and standby AMP, 0dB*, suitable load: 600 ohms or above, electronically-balanced, RJ45 Connector/ monitoring possible using built-in speaker
Audio Output Characteristic: Frequency response: 20Hz – 20kHz/ Sampling frequency: 48kHz/D/A converter: 24 bit
Connection Cable: Shielded Category 5 twisted pair cable (CAT5-STP)
Maximum Cable Distance: 16.4ft
Usable Amplifier: VP-2064, VP-2122, VP-2241 or VP-2421 (VP-200VX is required for each amplifier)
Local Audio Input:
Audio Input: 2 inputs, 0dB*, 10kΩ, electronically-balanced, RJ45 Connector
Audio Input Characteristic: Frequency response: 20Hz – 20kHz/ Sampling frequency: 48kHz/A/D converter: 24 bit
Control Input: 2 inputs, no-voltage make contact input, open voltage: 12V DC, short-circuit: 2mA, photo coupler input
Connection Cable: Shielded Category 5 twisted pair cable (CAT5-STP)
SX Link:
Network I/F: 2 100 BASE-TX circuits, RJ45 connector, decentralized installation possible
Connection Cable/Device: Shielded Category 5 twisted pair cable for LAN (CAT5-STP)
To be connected via the switching hub specified by TOA.
Note: This network must be made completely independent from other LAN.
Maximum Cable Distance: 328ft (between this unit and a switching hub)

Analog Link:
Input/Output Connector: Input: 1 input, RJ45 connector/ Output: 1 output, RJ45 connector
Connection Cable: Shielded Category 5 twisted pair cable for LAN (CAT5-STP) (1 pair of audio wire + 1 pair of CPU OFF + 1 pair of control wire (system reset/standby) + 1 pair of connection check wire)
Maximum Cable Distance: Total length of analog link: 2625ft
DS Link:
Usable Unit: VX-2000DS
Connector/Cable: 2 interface, RJ45 Connector, Shielded Category 5 twisted pair cable (CAT5-STP)
Maximum Cable Distance: 16.4ft
CI/CO Link:
Usable Unit: VX-2000CI or SX-2000CO
Connector/Cable: 1 interface, RJ45 Connector, Shielded Category 5 twisted pair cable (CAT5-STP)
Maximum Cable Distance: 2625ft
Speaker Line Failure Detection Section:
Connector/Cable: Removable terminal block. SP/AMP: 8 pins, STANDBY AMP: 2 pins, AWG 24 – AWG 16
Maximum Input: 100Vrms, 5Arms
Fault Detection System: Short circuit, open circuit, ground fault
Method: Impedance or End of line
End of Line: In case of normal: Terminated by 470kΩ between the speaker line and the shield/In case of open: Opened between the speaker line and the shield/
Impedance: Minimum load: 2kΩ (5W) at 100V line
Control Input: 8 inputs, no-voltage make contact input, open voltage: 40V DC, short-circuit current: 2mA, photo coupler input, removable terminal block (6 pins)
Control Output: 8 outputs, C contact, no-voltage make contact output, relay contact output (withstand voltage: 40V DC, control current: 2 – 300mA), removable terminal block (6 pins)
Operating Temperature: 32°F to +104°F
Operating Humidity: 35% to 80% RH (no condensation)
Finish: Panel: Aluminum, black, alumite,
Case: Surface-treated steel plate
Dimensions: 19 (W) × 3.5 (H) × 13.7 (D)in
Weight: 15.7lbs
Accessory: Removable terminal plug (8 pins) × 4, Removable terminal plug (6 pins) × 8, Removable terminal plug (4 pins) × 1, Removable terminal plug (3 pins) × 1, Removable terminal plug (2 pins) × 1, Rack mounting screw × 4

SX-2000CI
Control Input Unit

Power Source: Usable power supply unit: VX-200PS/ 24V DC (operational range: 20V – 40V DC)/Two power inputs construction enables dual- redundant power supply.
Current Consumption: 0.7A or less (maximum value in the power operating range)/0.55A or less (when operated on 24V DC)
Indication: Control input indicator (32), Power indicator, CPU OFF indicator, FAULT indicator
Control Input: 32 inputs, no-voltage make contact input, open voltage: 24V DC, short-circuit current: 2mA, photo coupler input, removable terminal block (16 pins)
Surveillance Section for The Control Input Lines: Connection resistance to make the function inactive: 20kΩ ±5%/Connection resistance to make the function active: 10kΩ ±5%/Connector cable: Twisted pair cable (shielded type is recommended)/ Maximum cable distance: 32.8ft
CI/CO Link:
Input/Output Connector: Input: 1 input, Output: 1 output, RJ45 connector
Connection Cable: Shielded Category 5 twisted pair cable (CAT5-STP) (1 pair of data wire + 1 pair of control wire)
Maximum Cable Distance: 2625ft

24V DC Output:
Output Voltage: 24V DC ±10% or less
Maximum Feeding Current: 100mA
Connector: Removable terminal block (2 pins)
Operating Temperature: 32°F to +104°F
Operating Humidity: 35% to 80% RH (no condensation)
Finish: Panel: Aluminum, black, alumite,
Case: Surface-treated steel plate
Dimensions: 19 (W) × 1.7 (H) × 13 (D)in
Weight: 8lbs
Accessory: Removable terminal plug (16 pins) × 4, Removable terminal plug (4 pins) × 1, Removable terminal plug (2 pins) × 1, Rack mounting screw × 4

SX-2000CO
Control Output Unit

Power Source: Usable power supply unit: VX-200PS/ 24V DC (operational range: 20V – 40V DC)/Two power inputs construction enables dual- redundant power supply.
Current Consumption: 0.34A or less (maximum value in the power operating range)/0.29A or less (when operated on 24V DC)
Indication: Control output indicator (32), Power indicator, CPU OFF indicator, FAULT indicator
Control Output: 32 outputs, no-voltage make contact output, relay contact output (withstand voltage: 40V DC, control current: 2 – 300mA), removable terminal block (6 pins)
CI/CO Link:
Input/Output Connector: Input: 1 input, Output: 1 output, RJ45 connector
Connection Cable: Shielded Category 5 twisted pair cable (CAT5-STP) (1 pair of data wire + 1 pair of control wire)
Maximum Cable Distance: 2625ft

Operating Temperature: 32°F to +104°F
Operating Humidity: 35% to 80% RH (no condensation)
Finish: Panel: Aluminum, black, alumite,
Case: Surface-treated steel plate
Dimensions: 19 (W) × 1.7 (H) × 13 (D)in
Weight: 8lbs
Accessory: Removable terminal plug (6 pins) × 16, Removable terminal plug (4 pins) × 1, Rack mounting screw × 4

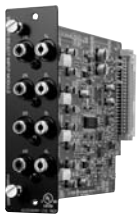
SX-2000 Series Modules

SX-200RM
Remote Microphone Interface Module

Audio Input: 2 inputs, 0dB*, RJ45 Connector
Audio Input Characteristic:
Sampling Frequency: 48kHz
A/D Converter: 24 bit
Power Feed: Max. 1A per connector
Level Control: Audio input (0 to +12dB)
Finish: Panel: Pre-coated steel plate, black, 30% gloss
Dimensions: 1.4 (W) x 4.7 (H) x 7 (D) in
Weight: 0.4lbs

* 0dB = 1V

D-936R
Stereo Select Input Module



Input: monaural x 2/-10dB*, 10k ohms, RCA pin jack
A/D converter: 24 bits
Frequency Response: 20Hz – 20kHz, ±1dB (+4dB* input)
Sampling Frequency: 48 kHz
Dynamic range: 100dB (IHF-A weighted) or more
THD: 0.05% or less
Finish: Panel: Pre-coated steel plate, black, 30% gloss
Dimensions: 1.4 (W) x 4.7 (H) x 7 (D) in
Weight: 0.32lbs

* 0dB = 0.775V

D-921F
Mic/Line Input Module (24 bits Monaural Type)

Input: 2 channels, Mic/Line changeable/
Mic; -50/-36dB*, 4.7kΩ, electronically-balanced, equivalent to XLR-3-31 type/
Line; -10/+4dB*, 10kΩ, electronically-balanced, equivalent to XLR-3-31 type/
Phantom power supply (can be used when set for the microphone)
15V: (option: D-901, DP-K1, D-2008SP)
12V: (option: SX-2100AI)/
Ground lift switch
A/D Converter: 24 bits
Sampling Frequency: 48kHz
Frequency Response: 20Hz – 20kHz, ±1 dB (+4dB* input)
Dynamic Range: 100 dB (IHF-A weighted) or more (+4dB* input)
THD: 0.05% or less (+4dB* input)
Finish: Panel; Pre-coated steel plate, black , 30% gloss
Dimensions: 1.4 (W) x 4.7 (H) x 7 (D) in
Weight: 0.33lbs

* 0dB = 0.775V

D-921E
Mic/Line Input Module (24 bits Monaural Type)

Input: 2 channels, Mic/Line changeable/
Mic; -50/-36dB*, 4.7kΩ, electronically-balanced, removable terminal block (3 pins)/
Line; -10/+4dB*, 10kΩ, electronically-balanced, removable terminal block (3 pins)/
Phantom power supply (can be used when set for the microphone)
15V: (option: D-901, DP-K1, D-2008SP)
12V: (option: SX-2100AI)/
Ground lift switch
A/D Converter: 24 bit
Sampling Frequency: 48kHz
Frequency Response: 20Hz – 20kHz, ±1dB (+4dB* input)
Dynamic Range: 100dB (IHF-A weighted) or more (+4dB* input)
THD: 0.05% or less (+4dB* input)
Finish: Panel; Pre-coated steel plate, black , 30% gloss
Dimensions: 1.4 (W) x 4.7 (H) x 7 (D) in
Weight: 0.31lbs
Accessory: Removable terminal block type connector (preinstalled on the unit) × 2

* 0dB = 0.775V

D-922F
Mic/Line Input Module (20 bits Monaural Type)

Input: 2 channels, -50/-36/-10/+4dB* (Selectable with the DIP switch), 4.7kΩ, electronically-balanced, equivalent to XLR-3-31 type/
Phantom power supply (can be set with DIP switch)
15V: (option: D-901, DP-K1, D-2008SP)
12V: (option: SX-2100AI)/
Ground lift switch (can be set with the DIP switch)
A/D Converter: 20 bits
Sampling Frequency: 48 kHz
Frequency Response: 20Hz – 20kHz, ±1dB (+4dB* input)
Dynamic Range: 85dB (IHF-A weighted) or more (+4dB* input)
THD: 0.2% or less (+4dB* input)
Finish: Panel; Pre-coated steel plate, black, 30% gloss
Dimensions: 1.4 (W) x 4.7 (H) x 7 (D) in
Weight: 0.3lbs

* 0dB = 0.775V

D-922E
Mic/Line Input Module (20 bits Monaural Type)

Input: 2 channels, -50/-36/-10/+4dB* (Selectable with the DIP switch), 4.7kΩ, electronically-balanced, removable terminal block (3 pins)/
Phantom power supply (can be set with the DIP switch)
15V: (option: D-901, DP-K1, D-2008SP)
12V: (option: SX-2100AI)/
Ground lift switch (can be set with the DIP switch)
A/D Converter: 20 bits
Sampling Frequency: 48 kHz
Frequency Response: 20Hz – 20kHz, ±1dB (+4dB* input)
Dynamic Range: 85dB (IHF-A weighted) or more (+4dB* input)
THD: 0.2% or less (+4dB* input)
Finish: Panel; Pre-coated steel plate, black, 30% gloss
Dimensions: 1.4 (W) x 4.7 (H) x 7 (D) in
Weight: 0.26lbs
Accessory: Removable terminal block type connector (preinstalled on the unit) × 2

* 0dB = 0.775V

SX-2000 Series Microphones and Optional Accessories

RM-200SF
Fireman's Microphone

Power Source: 24V DC (operating range: 15 – 40V DC, supplied from the SX-2000AI or SX-2100AI audio input unit)
Current Consumption: 240mA or less
Audio Output: 0dB*, transformer-balanced
Distortion: 1% or less
Frequency Response: 200Hz – 15kHz
S/N Ratio: 55dB or more
Microphone: Unidirectional dynamic microphone with talk key, AGC (ON/OFF switchable), microphone element failure detectable by using a built-in small oscillator
Volume Control: Microphone volume control, Monitor speaker volume control
Connection Cable: Shielded CPEV cable (each 1 pair of audio wire, data wire, monitor/control wire and power supply wire) or Shielded Category 5 twisted pair cable (CAT5-STP)
Maximum Cable Distance: 2625ft
Number of Connectable Expansion: Max. 5 units

Monitor Speaker: Built inside
Operation: Emergency key, Function keys, CPU switch, Reset switch
Indicator: Status indicators, Power indicator, Failure indicator, CPU indicator, Selection indicators, Microphone indicator, Broadcast status indicator
Operating Temperature: 32°F to +104°F
Operating Humidity: 35% to 80% RH (no condensation)
Finish: ABS resin, blueish gray (PANTONE 538 or its equivalent)
Dimensions: 8 (W) × 8.5 (H) × 3.8 (D)in (with wall mounting bracket unit)
Weight: 3.3lbs (with wall mounting bracket unit)
Accessory: EMC clamp x 1, Wall mounting bracket unit x 1, Wall mounting screw x 2, Box mounting screw x 2
Option: Remote microphone extension: RM-210
Applicable Box: YS-11A

RM-200SA
Remote Microphone

Power Source: 24V DC (operating range: 15 – 40V DC, supplied from the SX-2000AI or SX-2100AI audio input unit) or DC input power supple connector (when the optional AD-246 power supply unit used)/Usable DC power supply plug: 0.2in outer diameter, 0.08in inner diameter 0.4in long, and non-polarity type
Current Consumption: 240mA or less
Audio Output: 0dB*, 600Ω, balanced
External Microphone Input: -40dB*, 2.2kΩ, unbalanced, mini jack, for electret condenser microphone (phantom power supply. 3V DC)
Distortion: 1% or less
Frequency Response: 100Hz – 20kHz
S/N Ratio: 60dB or more
Microphone: Unidirectional electret condenser microphone with AGC (ON/OFF selectable)
Chime: Built inside (PCM sound source), monitoring possible using built-in speaker
Level Control: Microphone sensitivity control, monitor speaker volume control, chime (adjustable using the software)

Connection Cable: Main line: Shielded CPEV cable(1 pair of audio wire + 1 pair of data wire + 1 pair of monitor/control wire + 1 pair of supply wire) or Shielded Category 5 twisted pair cable (CAT5-STP)/Branch line: Shielded Category 5 twisted pair cable (CAT5-STP), RJ45 connector
Maximum Cable Distance: 2625ft
Number of Connectable Expansion: Max. 4 units
Monitor Speaker: Built inside
Operation: Function switch, Covered switch, Broadcast switch
Indicator: Power indicator, Failure indicator, Function switch indicator, Covered switch indicator, Broadcast switch indicator
Operating Temperature: 32°F to +104°F
Operating Humidity: 35% to 80% RH (no condensation)
Finish: ABS resin, blueish gray
Dimensions: 7.5 (W) × 3 (H) × 8.5 (D)in (excluding microphone)
Weight: 2lbs

*0dB = 1V

RM-210
Remote Microphone Extension

Current Consumption: 20mA max. (in terms of RM-200M's DC power input)/75mA max. (in terms of DC power inputs of RM-200X and RM-200XF)/80mA max. (in terms of DC power input of RM-200SA and RM-200SF)
Connection: Connection by way of dedicated cable
Number of Function Keys: 10
Finish: ABS resin, blueish gray (PANTONE 538 or its equivalent)
Dimensions: 4.3 (W) × 3 (H) × 8.5 (D)mm

Weight: 1lbs
Accessory: Extension cable × 1, Linkage bracket A × 2, Linkage bracket B × 1, Screw for linkage bracket × 12
Applicable Unit (option): RM-200SA, RM-200SF, RM-200M, RM-200X, RM-200XF

RM-200RJ
Terminal Unit

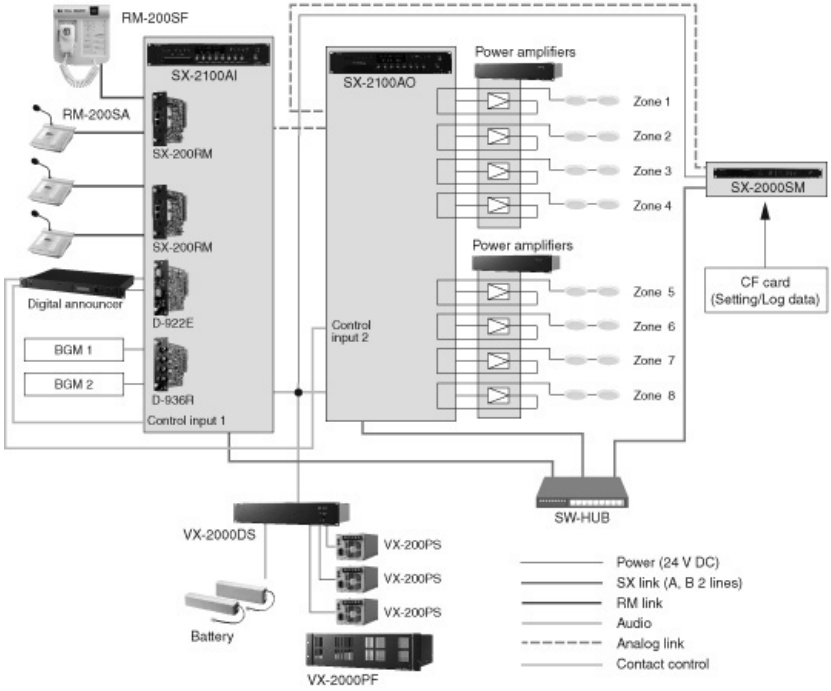
Applied Voltage: 40V or less
Withstand Voltage: 1A
Voltage Indicator: Monitor terminals: Terminal No. 7 (+) and terminal No. 8 (-), extinguish voltage: under 14A, lighting voltage: 21V or more, indicator ON/OFF switchable
Connector: RJ45 connector: 1
Terminal: M3 screw terminal (10 pins), distance between barriers+ 0.3in
Operating Temperature: 32°F to +104°F
Operating Humidity: 35% to 80% RH (no condensation)

Finish: Surface-treated steel plate, black, paint
Dimensions: 3.3 (W) × 4.6 (H) × 1 (D)in
Weight: 0.6lbs

VX-2000DS
Emergency Power Supply

Power Source: 230V AC, 50/60Hz
Power Consumption: 240W max
Applicable Battery: YUASA NP series (12V × 2 or 4), Panasonic LC-X1265PG/APG (65 Ah)
Charging Method: Trickle charging
Charging Current: 5A max
Charging Output Voltage: 27.3V ±0.3V (at 25°C)/ Temperature correction coefficient; -40mV/°C
Power Supply Input: 6 M4 screw terminal, distance between barriers; 0.4in
DC Power Output: 6 (25A max. each) M4 screw terminal, distance between barriers; 0.4in
Control Connector: RJ45 female connector for connecting the VX-2000SF Surveillance Frame/Twisted-pair straight cable (TIA/EIA-568A standard)/Type of control signal: Battery check, AC power status, DC power status, charging circuit failure, and battery failure
Battery Connection: 1 pair of positive and negative terminals/ Applicable cable diameter; AWG 6 – AWG 1/0
Operating Temperature: 32°F to +104°F
Finish: Panel; Surface-treated steel plate, black, 30% gloss, paint
Dimensions: 19 (W) × 3.5 (H) × 15 (D)in
Weight: 23lbs
Accessory: Rack mounting screw × 4, Fiber washer × 4, Blade fuse (40A) × 3, Fuse (T3.15A L) × 1, Power cord (6.6ft) × 1, Insulating sheet × 1, Attention label × 1

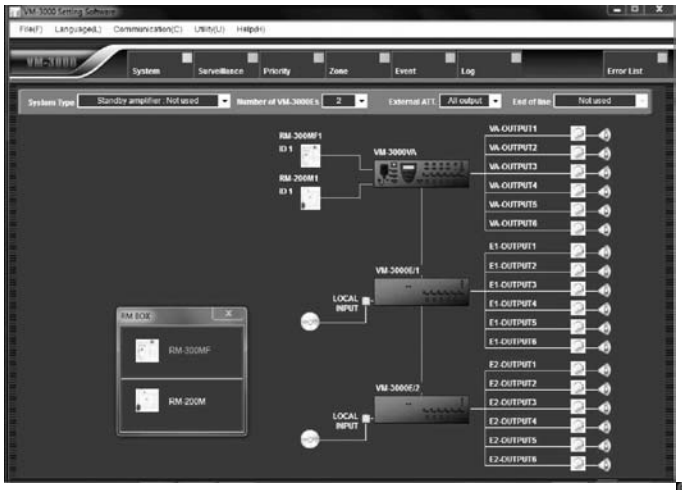
SX-2000 Series System Image



VM-3000 Series

The **VM-3000 Series** (UL2572 Pending) is an Emergency Voice Paging System ideal for small and medium-sized applications. It incorporates such emergency functions as continuous speaker line monitoring and a built-in voice alarm. This easy-to-install system also offers PA broadcasting, paging and BGM functions that ensure consistently high intelligibility. The VM-3000 Series is digitally audio processed and controlled, and may be set up and operated directly by using the controls and LCD display on the front panel. A dedicated PC software configuration capability is also provided for establishing settings via LAN. The incorporation of wide-ranging functional capabilities, superb reliability and versatility make the VM-3000 a highly cost-effective emergency broadcast system.

These models are UL60065 safety certified for sale in the US and also carry the European standard EN-54/ Part 16 Emergency Notification rating. However, these do not carry the UL2572 certification (in compliance with NFPA72 codes). This certification is currently pending for future production models, introduction of which will be announced separately later this year. The models mentioned in this announcement are not and will not ever be certified under UL2572. Use for emergency applications is subject to AHJ approval.



VM-3000 Series

VM-3240VA (240W)
Voice Alarm System Amplifier

Power Source: 230V AC, 50/60Hz
Power Consumption: 600W (at rated output), 260W
Rated Output: 240W
Frequency Response: 50Hz – 20kHz, ±3dB (at 1/3 rated output)
Distortion: 0.7% or less (at rated output, 1kHz)
Signal-to-Noise Ratio: 85dB or more
Audio Input/Output Characteristic: Sampling frequency: 48kHz/A/D D/A CONVERTER: 24bit
Input: Inputs 1 – 3: -50dB* (MIC)/-10dB* (LINE) (changeable), 600Ω, electronically balanced, combined XLR connector (female)/phone jack
Input 4: -50dB* (MIC)/-10dB* (LINE), 600Ω, electronically balanced plug in screw connector
BGM 1 – 2: -10dB*, 10 kΩ RCA pin jack
External AMP input: 100V line, removable terminal block (14 pins)
Output: Speaker output 1 – 2: max (240w) per output
Speaker output 3 – 6: max (120w) per output
Speaker output 1 – 6: Total within 240W, removable terminal block (14 pins)
Allowable minimum load: 500Ω (20W) at 100V line for speaker line failure detection
Direct output: Direct output from internal or external amplifier, removable terminal block (16 pins)
Recording output BGM/Paging: 0dB, 10kΩ, RCA pin jack
RM Link: Input 1 – 2: Connecting the RM-300MF/RM-200M Remote Microphone, RJ45 female connector
Maximum distance: Total 2625ft between this unit and remote microphones
Link cable: Category 5 Shielded Twisted-Pair straight cable (CAT5-STP)
Network I/F: 10 BASE-T/100 BASE-TX (selectable by automatic negotiation), RJ45 female connector
Maximum distance: 328ft between this unit and a switching hub
Link cable: Category 5 Shielded Twisted-Pair straight cable (CAT5-STP)
VM Link: Connecting the VM-3240E, RJ45 female connector
Maximum distance: 2625ft
Link cable: Category 5 Shielded Twisted-Pair straight cable (CAT5-STP)
EXT PA Link: Maximum distance: 16.4ft
Link cable: Category 5 Shielded Twisted-Pair straight cable (CAT5-STP)
General Control: Input 1 – 8: No-Voltage make contact input, open voltage: 24V DC, short-circuit current: 2mA or less, RJ45 female connector
Output 1 – 8: Isolated open collector output, withstand voltage: 30V DC, operating current: 50mA or less, removable terminal block (14 × 2 pins)
Emergency Control: Input 1 – 5: No-Voltage make contact input, open voltage : 24V DC, short-circuit current: 2mA or less, RJ45 female connector
Input 6: Isolated voltage input: Inactive; -24V ±20%, Active; +24V ±20%, RJ45 female connector
Status out: Relay contact output, withstand voltage: 40V DC, operating current: 2 – 300mA, RJ45 female connector
ATT Control: Relay contact 1 – 6, 125V AC or 30V DC, total under 5A, removable terminal block (16 pins)
Power In/Out: PS out: 8V DC/18A
M4 Screw terminal distance between barriers 0.4in
DC24V Output: 24V DC, Maximum feeding current 0.3A
DS Link: Connecting the VX-2000DS, RJ45 female connector
Maximum distance: 16.4ft
Link cable: Category 5 Shielded Twisted-Pair straight cable (CAT5-STP)
Operating Temperature: 23°F to 113°F
Operating Humidity: 5% to 95% RH (no condensation)
Finish: Panel Aluminum, hairline, black,
Case: Surface-treated steel plate. black, paint
Dimensions: 19 (W) × 5.2 (H) × 18 (D)in
Weight: 36.4lbs
Accessory: Power cord (6.6ft) × 1, Setting software-CD × 1, Link cable (9.8ft) × 2, Plastic foot × 4, Plastic foot mounting screw × 4, Removable terminal plug (14 pins) × 3, Removable terminal plug (16 pins) × 1, Emergency microphone (hand-held type) × 1
Option: Input transformer: IT-450

* 0 dB = 1 V

VM-3240E (240W)
VM Extension Amplifier

Power Source: 230V AC, 50/60Hz/ 24V DC
Power Consumption: 600W (at rated output), 260W
Rated Output: 240W
Frequency Response: 50Hz – 20kHz, ±3dB (at 1/3 rated output)
Distortion: 0.7% or less (at rated output, 1kHz)
Signal-to-Noise Ratio: 85dB or more
Input: External AMP input: 100V line, removable terminal block (14 pins)
Local input: -50dB* (MIC)/-10dB* (LINE) (changeable), 600Ω, electronically balanced, removable terminal block (14 pins)
Output: Speaker output 1 – 2: max (240w) per output
Speaker output 3 – 6: max (120w) per output
Speaker output 1 – 6: Total within 240W, removable terminal block (14 pins)
Allowable minimum load: 500Ω (20W) at 100V line for speaker line failure detection
Direct output: Direct output from internal or external amplifier, removable terminal block (16 pins)
VM Link: Input: Connecting the VM-3240VA, RJ45 female connector
Output: Connecting the VM-3240E, RJ45 female connector
Maximum distance: 2625ft
Link cable: Category 5 Shielded Twisted-Pair straight cable (CAT5-STP)
EXT PA Link: Maximum distance: 16.4ft
Link cable: Category 5 Shielded Twisted-Pair straight cable (CAT5-STP)
General Control: Input 1 – 8: No-Voltage make contact input, open voltage: 24V DC, short-circuit current: 2mA or less, RJ45 female connector
Output 1 – 8: Isolated open collector output, withstand voltage: 30V DC, operating current: 50mA or less, removable terminal block (14 pins)
Emergency Control: Input 1 – 5: No-Voltage make contact input, open voltage : 24V DC, short-circuit current: 2mA or less, RJ45 female connector
Input 6: Isolated voltage input: Inactive; -24V ±20%, Active; +24V ±20%, RJ45 female connector
Status out: Relay contact output, withstand voltage: 40V DC, operating current: 2 – 300mA, RJ45 female connector
ATT Control: Relay contact 1 – 6, 125V AC or 30V DC, total under 5A, removable terminal block (16 pins)
Power In/Out: Power in: Connecting the VX-2000DS only (operating range: 20 - 40V DC)
PS out: 28V DC/18A
M4 Screw terminal distance between barriers 11mm
24V DC Output: 24V DC, Maximum feeding current 0.3A
DS Link: Connecting the VX-2000DS, RJ45 female connector
Maximum distance: 16.4ft
Link cable: Category 5 Shielded Twisted-Pair straight cable (CAT5-STP)
Operating Temperature: 23°F to 113°F
Operating Humidity: 5% to 95% RH (no condensation)
Finish: Panel Aluminum, hairline, black,
Case: Surface-treated steel plate. black, paint
Dimensions: 19 (W) × 5.2 (H) × 16 (D)in
Weight: 36.4lbs
Accessory: Power cord (6.6ft) × 1, Link cable (9.8ft) × 2, Plastic foot × 4, Plastic foot mounting screw × 4, Removable terminal plug (14 pins) × 3, Removable terminal plug (16 pins) × 1

*0dB = 1 V

IT-450
Input Transformer

Impedance: 600Ω ±10%
Frequency Response: 200Hz – 10kHz

VM-3000 Series Microphones and Optional Accessories

RM-300MF
Fireman's Microphone

Power Source: 24V DC (operating range; 15 – 40V DC, supplied from the VM-3000 system)
Current Consumption: 120mA (RM-300MF), 660mA (with 3 RM-320F connected)
Frequency Response: 200Hz – 15kHz
Distortion: 1% or less
S/N Ratio: 55dB or more
Microphone: Unidirectional dynamic microphone with talk key, compressor (on/off switchable)
Volume Control: Microphone volume control, Buzzer volume control
Connection Cable: Main line: shielded CPEV cable (each one pair of Audio line, Data line, Power supply line) or Category 5 Shielded Twisted-Pair straight cable for LAN (CAT5-STP), M3 screw terminal
Maximum Cable Distance: Total 2625ft

Number of Connectable RM-320F: Max 3 units
Operation: Emergency key, Evacuate key, Alert key, Emergency reset key CPU switch, Reset switch
Indicator: Power indicator, Emergency indicator, Communication failure indicator, CPU OFF indicator, Evacuation announcement indicator, Alert announcement indicator, Emergency reset indicator, Microphone in-use indicator, External emergency microphone in-use indicator
Operating Temperature: 23°F to 113°F
Operating Humidity: 5% to 95% RH (no condensation)
Finish: ABS resin, blueish gray (PANTONE 538 or its equivalent)
Dimensions: 8 (W) × 8.5 (H) × 3.2 (D) in
Weight: 2.4lbs (with wall mounting bracket unit)
Accessory: Wall mounting bracket × 1, Wall mounting screw × 2, Electrical box mounting screw × 2

RM-200M
Remote Microphone

Power Source: 24V DC (operating range; 16 – 40V DC), supplied from RJ45 connector or power input jack (non-polarity type)/Usable power input plug; 0.2in outer diameter, 0.08in inner diameter, and 0.3in long
Current Consumption: Under 200mA (RM-200X), 750mA (with 9 RM-210s connected)
Audio Output: 0dB*, 600Ω, balanced, RJ45 connector
Gooseneck Microphone: Unidirectional electret condenser microphone
External Microphone Input: -40dB*, 2.2k ohms, unbalanced, mini jack, phantom powering
Distortion: Under 1%
Frequency Response: 100Hz – 20kHz
S/N Ratio: Over 60dB
Internal Monitor Speaker: 200mW
Volume Control: Microphone volume control, Monitor speaker volume control

Number of Function Keys: 15, extendable up to 105 (with 9 RM-210s connected)
Key Extension: 10 keys extension per RM-210, EXTENSION connector
Number of Connectable Units: 8 (include RM-200XF)
Communication System: LONWORKS twisted pair free topology transceiver
Connection Cable and Connector: Category 5 STP cable, RJ45 connector
Communication Distance: 1640ft (Free topology wiring)
Finish: ABS resin, blueish gray (PANTONE 538 or its equivalent)
Dimensions: 7.5 (W) × 3 (H) × 8.5 (D)in (gooseneck microphone excluded)
Weight: 2lbs

* 0 dB = 1 V
Note: LONWORKS is a trademark of Echelon Corporation.

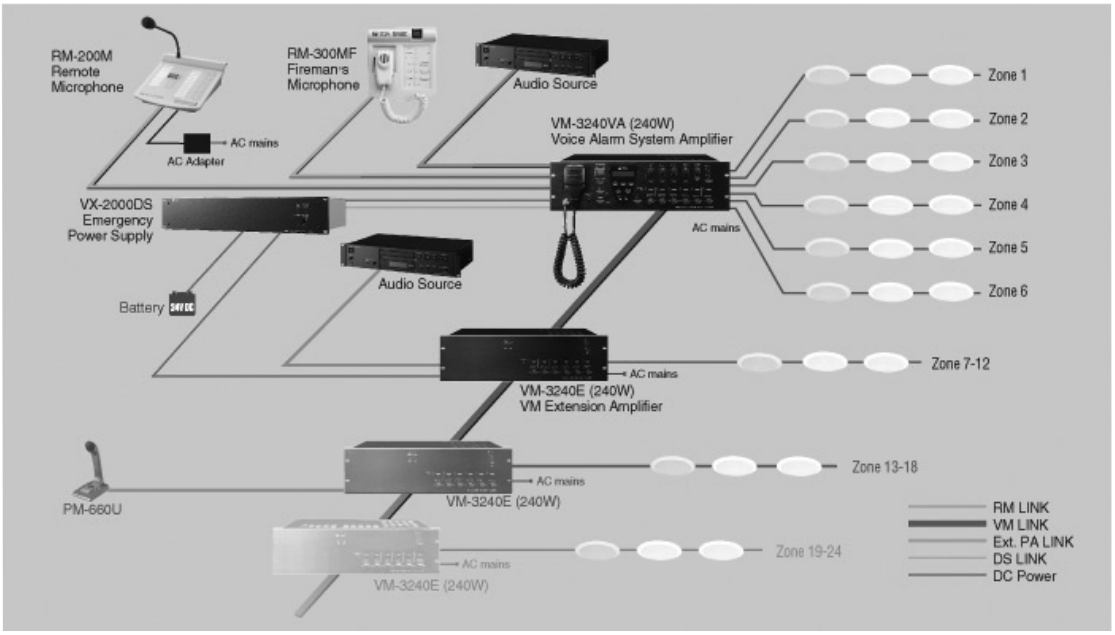
RM-320F
Fireman's Microphone Extension

Current Consumption: 180mA max (in terms of RM-300MF)
Connection: Connection to RM-300MF by dedicated cable
Number of Function Keys: 20
Finish: ABS resin, blueish gray (PANTONE 538 or its equivalent)
Dimensions: 7 (W) × 8.5 (H) × 2.6 (D) in
Weight: 1.5lbs
Accessory: Wall mounting bracket × 1, Wall mounting screw × 2

RM-210
Remote Microphone Extension

Current Consumption: 20mA max. (in terms of RM-200M's DC power input)/75mA max. (in terms of DC power inputs of RM-200X and RM-200XF)/80mA max. (in terms of DC power input of RM-200SA and RM-200SF)
Connection: Connection by way of dedicated cable
Number of Function Keys: 10
Finish: ABS resin, blueish gray (PANTONE 538 or its equivalent)
Dimensions: 4.3 (W) × 3 (H) × 8.5 (D)in
Weight: 0.8lbs
Accessory: Extension cable × 1, Linkage bracket A × 2, Linkage bracket B × 1, Screw for linkage bracket × 12
Applicable Unit (option): RM-200SA, RM-200SF, RM-200M, RM-200X, RM-200XF

VM-3000 Series System Image



Amplifiers

9000 Series Modular Digital Matrix Amplifiers

Digital Matrix Power Amplifiers

P-9060DH (60W)
P-9120DH (120W)
Power Amplifier

TOA's **P-9000 Series Power Amplifiers** provide 2-Channel power amplifiers to provide system expansion of the 70.7 volt amplifier outputs for the 9000 Series Mixer/Amplifiers using the T-001T output modules. This maintains the systems cool 9000 Series style and look.

MAIN FEATURES

DUAL CHANNEL POWER AMPLIFIER

- 2-Channel Power Amplifiers with 70.7V outputs:
  - P-9060DH - 60W (x2)
  - P-9120DH - 120W (x2)
- 2-Channel Power Amplifier models feature flexible output power allowing 50% power from one amplifier channel to be allocated to the second amplifier channel
- Channel 1 & 2 inputs balanced (H=Hot, C=Cold and E=Shield) with selectable input sensitivity: 0dB or -20dB)
- Channel 1 input to ALL selectable switch
- 2 RU Rack Mounting hardware included
- Front panel LED indicators for: Protect, Peak, Signal and Power
- 5 year warranty

Power Source: 120V AC, 60Hz
Power Consumption: P-9060DH: 225W (rated output), 106W (UL60065)/P-9120DH: 404W (rated output), 208W (UL60065)
Output: P-9060DH: Speaker output CH 1, CH 2: 60W, 83Ω x 2, BTL output (70V line), M4 screw terminal, distance between barriers: 9mm/P-9120DH: Speaker output CH 1, CH 2: 120W, 41Ω x 2, BTL output (70V line), M4 screw terminal, distance between barriers: 9mm
Input: CH 1, CH 2 input: -20dB* or 0dB* (switchable), 10kΩ, electronically-balanced, removable terminal block/
CH 1 mode ON/OFF switch (ON: CH 1 to All ch, OFF: Each ch)
Power Band Width: 20 – 20,000Hz, 0.08% T.H.D.
Frequency Response: 20 – 20,000Hz (+1, -3dB)
S/N ratio: At Input short, 20 – 20,000Hz, Input level switch in 0dB* position/
Output volume min.: 105dB, Output volume max.: 97dB
THD: 0.008% (22kHz LPF, 1kHz, rated output, input level switch in 0dB* position)

Function: Output disconnected for approx. 5s after switching power on
Air Cooling: Forced air cooling (Fan speed: varies depending on the temperature)
Operating Temperature: 14°F to +104°F
Operating Humidity: 35% to 80% RH (no condensation)
Finish: Panel: Aluminum, hair-line, black
Case: SECC, black paint
Dimensions: 16.5 (W) × 4.2 (H) × 16 (D)in
Weight: P-9060DH: 18lbs, P-9120DH: 22lbs
Accessory: Power cord (6.6ft) × 1, Volume control cover (YA-920) × 2, Rack mount bracket × 2, Bracket mounting screw (M4 × 16) × 4, Removable terminal plug (3 pins) × 2, Terminal cover × 1, Terminal cover mounting screw (M4 × 8) × 2

* 0dB = 1V

Digital Matrix Mixer

M-9000M2
Digital Matrix Mixer

TOA's **9000M2 Series Modular Digital Matrix Mixer/Amplifiers** redefine the conventional mixer/amplifier category by combining a modular matrix mixer, digital signal processor (DSP) and amplifiers in a compact, two rack space package. This versatile series is ideal for multi-zone paging, music distribution and room-combining applications. The **9000M2 Series** models include dual and single channel amplifiers with high or low impedance outputs plus a matrix mixer-only version.

The **9000M2** is designed to be used in conjunction with optional modules and can be configured for up to 8 inputs and 8 outputs. **9000M2 series modules** as well as existing **900 series input modules** can be used.

HIGHLIGHTS

- **Modular Digital Matrix Mixer/Amplifiers** for a multitude of applications including audio conferencing, background music, broadcasting, zone paging, room combining and more
- **Exceptional Audio Quality:**
  - 24-bit, 48 kHz sampling
  - Ultra-low distortion - 0.0008%
- **Dual Channel Digital Signal Processor (DSP)** on input & output channels:
  - 10-band parametric EQ
  - High and low pass filters
  - Bass and treble
  - Loudness
  - Compressor
  - Gate (input only)
  - Ducker (input only)
  - NOM (automix)
  - Delay (output channel only)
  - 30 TOA speaker EQ presets (output channel only)
  - DSP included on 9000 mainframe outputs, D-001R, D-001T and T-001T modules
- **Enhanced GUI Programming Interface** for PC configuration and uploading/downloading of settings using RS-232 connection. Includes setup wizards and firmware upgrade utility.
- **Modular Mixer** - up to 8 mic/line inputs and 8 outputs
- **Single or Dual Channel Power Amplifiers** - 70.7 V, 25V 4 Ω wide range of power ratings
- **Flexible Output Power** - dual channel models allow up to 50% power from either amplifier channel to be allocated to the other channel (A-9060DHM2 and A-9120DHM2) (i.e. A-9060DHM2: CH1 90W, CH2:30W)
- **Flexible, integrated Operating System (Mixer + Paging Matrix):**
  - Mixer functions along with simultaneous Priority Paging Matrix activation, each with 32 presets
  - Scene memory (x32) contains all mixer (non-priority) settings
  - Paging memory (x32) contains global (static) input settings, independent Xpoint assignments, paging trigger and paging output levels for all high priority (1, 2, and 3) inputs
  - Both scene and paging memories are stored in a single template along with remote assignments, security lock and other global functions
  - Mixer and paging functions are independent and mixer (scene) settings will not affect paging (event) functions
- **Version 2.0 GUI and Firmware supports RM/SS function (see page 17)**

MAIN FEATURES

A-9060SM2, A-9120SM2, A-9240SHM2, A-9060DHM2, A-9120DHM2 MODULAR DIGITAL MATRIX MIXER AND MIXER/AMPLIFIERS

- Multiple input priority modes sets priority order when multiple inputs with the same priority level and output assignment are broadcast
  - First-In-First-Out (FIFO): input that occurs first is broadcast
  - Last-In-Last-Out (LIFO): the most recent input is broadcast
  - MIX: all inputs are simultaneously mixed and broadcast
- Voice Operated (VOX) paging activation with adjustable threshold/sensitivity and gate release time
- Stero link - control two inputs or outputs with one volume control
- Mixer output/power Amp. in patching loops (A-9060DHM2, A-9120SHM2) for connection of external processor(s)
- Balanced line output(s) - two: M-9000M2, one: A-9060SM2, A-9120SM2, A-9240SMHM2; expandable with T-001T dual line output modules
- Software utility for saving unit parameter to PC, updating unit firmware, virtual control activation and status indication
- Keylock security sets password-protected access to prevent access to Input, Output, Utility and Power functions
- Alphanumeric input/output channel and memory naming
- Detachable IEC-type AC cable
- Five year warranty

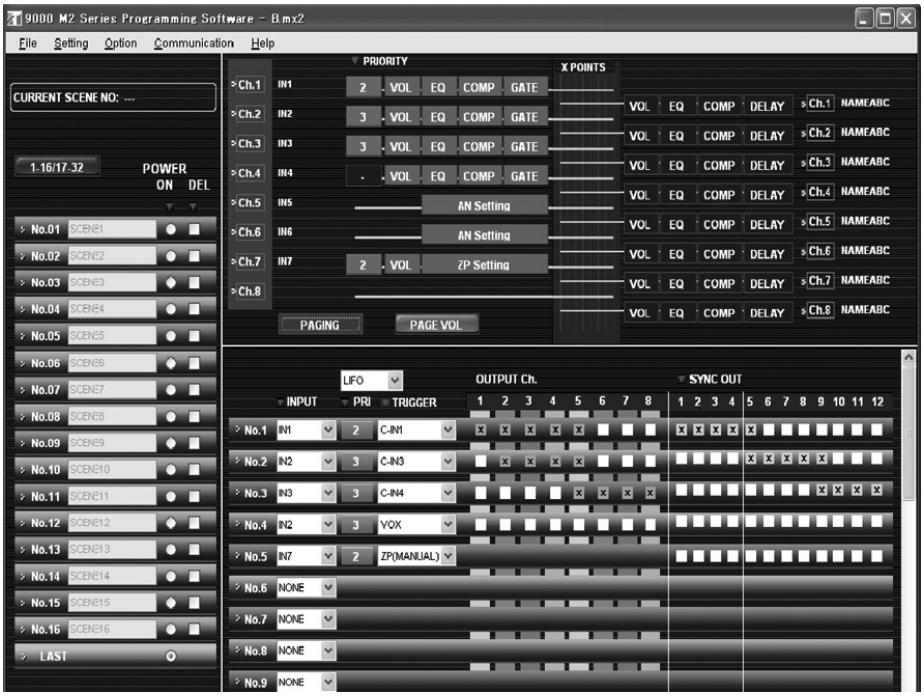
FLEXIBLE REMOTE CONTROL

- Two remote volume control terminals
- Four control inputs - programmable to activate paging/scene memory, volume up/down (input or output), mute (input or output), power on/off, emergency mute, sync on/off (expandable to twelve with C-001T module). Works with optional ZM-9003 or custom contact panel
- Four control outputs (open collector) programmable to activate external relays (expandable to twelve with C-001T module) synchronized with event/scene memory, channel on/off (input or output) and power on/off. Works with optional ZM-9003 or custom contact panel
- RS-485 remote controllers (requires optional RC-001T Module):
  - ZM-9011 single-gang assignable 4-button controller with LED status indicators
  - ZM-9012 single-gang assignable volume controller with LED level indicators
  - ZM-9013 dual-gang assignable 8-button controller with LED status indicators
  - ZM-9014 dual-gang assignable 4-button controller with LED status indicators, pl.us assignable volume controller with LED level indicators
- RS-232 serial port:
  - Allows upload and download of programming templates and firmware upgrades as well as real-time control of various parameters
  - Control protocol available
  - AMX and Crestron software modules available (by these providers)

A-9060DHM2 (60W)
A-9120DHM2 (120W)
Digital Matrix Mixer/Amplifier

A-9060SM2 (60W)
A-9120SM2 (120W)
A-9240SHM2 (240W)
Digital Matrix Mixer/Amplifier

Model	Mic/Line Inputs	Digital Signal Processor	Power Amplifier Output(s)	Line Outputs
A-9060SM2	Up to 8 (4x **D-001T**)	Up to 8 input channels (with 4x D-001T/R) plus up to 8 output channels (2 built in plus 3x T-001T)	1x 60 W @ 25/70V, 4/8 ohms	Up to 7 (1 built-in plus 3x **T-001T**)
A-9120SM2			1x 120 W @ 25/70V, 4/8 ohms	Up to 7 (1 built-in plus 3x **T-001T**)
A-9240SHM2			1x 240 W @ 70V	Up to 7 (1 built-in plus 3x **T-001T**)
A-9060DHM2			2x 60 W @ 70V	Up to 6 (3x **T-001T**)
A-9120DHM2			2x 120 W @ 70V	Up to 6 (3x **T-001T**)
M-9000M2			2x Line Level	Up to 8 (2 built-in plus 3x **T-001T**)



	A-9060DHM2 MIXER/AMP	A-9120DHM2 MIXER/AMP	A-9060SM2 MIXER/AMP
Power Source	120 V AC, 60 Hz		
Power Consumption	150 W	250 W	100 W
Audio Input	Max. 8 channels, modular construction (modules optional) Power amplifier input 1, 2: 0 dBV*1, 10k Ω, RCA pin jack		
Audio Output	Preamplifier output 1, 2: 0dBV, 300Ω, unbalanced, RCA pin jack		Preamplifier output 1: 0dBV, 300Ω, unbalanced, RCA pin jack; Preamplifier output 2: 0 dBV, 600Ω, balanced, removable terminal block (3 pins)
	Speaker output 1, 2: 60W, 70.7V line, 83Ω x 2, BTL output, removable terminal block (4 pins)	Speaker output 1, 2: 120W, 70.7V line, 41Ω x 2, BTL output, removable terminal block (4 pins)	Removable terminal block (7 pins); Direct: 60W, 4Ω, unbalanced, Transformer: 60W, 8Ω 25V and 70V, balanced
Module Slot	Analog input (slot 1 - 8): -10 dB*1, 10 kΩ, unbalanced; Digital input (slot 1 - 4): 24 bit/48 kHz; MIX output (slot 1 - 8): -14 dB*1, 330Ω (CH 1 prefader output), unbalanced; Digital output (slot 5 - 7): 24 bit/48 kHz; Power supply (slot 1 - 8): +24 V, -24V, +6V DC		
Digital Audio Signal Reference Level	-20 dBFS		
Power Bandwidth	20 - 20,000 Hz, 0.008% THD		(D): 20 - 20,000 Hz, 0.02% THD (T): 50 - 20,000 Hz, 0.5% THD
Frequency Response	Power amplifier section: 20 - 20,000 Hz, +0, -1 dB; Analog input module to speaker output: 20 - 20,000 Hz, +1, -3 dB		
Total Harmonic Distortion	Power amplifier section: 0.0008% (22 kHz LPF, 1 kHz, rated power) Analog input module to speaker output: 0.008% (22 kHz LPF, 1 kHz rated power)		Power amplifier section: 0.008% (22 kHz LPF, 1 kHz, rated power) Analog input module to speaker output: 0.008% (22 kHz, 1 kHz LPF)
S/N Ratio	At Input short, 20 - 20,000 Hz, ALL FLAT or OFF setting Output volume min.: 90dB (preamplifier output) Output volume max.: 61dB (preamplifier output, input 1 volume: 0 dB, other inputs: OFF) Power amplifier section: 110dB		
Cross Talk	Over 64 dB (at 20 kHz)		
Tone Control	Bass: ±12 dB (at 100 Hz) Treble: ±12 dB (at 10 kHz)		
Parametric Equalizer	10 bands, Freq: 20 - 20,000 Hz, 31 points, various range: ± 12 dB, Q: 0.3 - 5		
Speaker Equalizer	10 (set up software has 30 TOA speaker presets)		
High-pass Filter	-12 dB/oct, variable frequency range: 20 Hz - 20 kHz, 31 points		
Low-pass Filter	-12 dB/oct, variable frequency range: 20 Hz - 20 kHz, 31 points		
Compressor	Depth: 1 - 5		
Delay	0 - 40 ms (1 ms steps), maximum 40 ms (CH1 + CH2) (Mixer mode only)		
Scene/Event Memory	32		
Auxiliary Function	Key lock function		
Control Input/Output	RS-232C*2; D-sub connector (9P, female); Control input: 4 input, no-voltage make contact input, open voltage: 3.3V DC, short-circuit current: Under 1 mA, removable terminal block (14 pins); Control output: 4 outputs, open collector output, withstand voltage: 27V DC, control current: 50 mA, removable terminal block (14 pins); Remote volume: 2 channels, connect a 10k Ω/linear taper variable register or input the DC voltage of 0 to +10 V, removable terminal block (14 pins)		
Operating Temperature	-10°C to +40°C (14° F to 104° F)		
Operating Humidity	35% to 80% RH (no condensation)		
Finish	Panel: Aluminum, hair-line, black; Case: Surface-treated steel plate, black paint		
Dimensions	16.54" (W) x 4.24" (H) x 15.55" (D) / 420 (W) × 107.6 (H) × 395 (D) mm		16.54" (W) x 4.24" (H) x 13.98" (D) 420(W) × 107.6(H) × 355(D) mm
Weight	19.84lbs (9kg)	24.25lbs (11kg)	
Accessory	Power cord (2 m (6.56ft)) x 1, Rack mounting bracket x 2, Bracket mounting screw x 4, Blank panel x 7, Blank panel mounting screw x 14, Removable terminal plug (4 pins) x 1, CD x 1, Removable terminal plug (14 pins) x 1		Power cord (2 m (6.56ft)) x 1, Rack mounting bracket x 2, Bracket mounting screw x 4, Blank panel x 7, Blank panel mounting screw x 14, Removable terminal plug (3 pins) x 1, CD x 1, Removable terminal plug (14 pins) x 1

	A-9120SM2 MIXER/AMP	A-9240SHM2 MIXER/AMP	M-9000M2 MIXER
Power Source	120 V AC, 60 Hz		
Power Consumption	150 W	250 W	40 W
Audio Input	Max. 8 channels, modular construction (modules optional) Power amplifier input: 0 dB*1, 10 kΩ, RCA pin jack		Max. 8 channels, modular construction (modules optional)
Audio Output	Preamplifier output 1: 0 dB*1, 300 Ω, unbalanced, RCA pin jack Preamplifier output 2: 0 dB*1, 600 Ω, unbalanced, removable terminal block (3 pins)		Preamplifier output 1, 2: 0 dB*1, 600 Ω, balanced, removable terminal block (3 pins)
	Speaker output: Removable terminal block (7 pins); Direct: 120 W, 4Ω. unbalanced; Transformer: 120 W, 8Ω 25V & 70V, balanced	Speaker output: 240 W, 21 Ω, BTL output, removable terminal block (4 pins)	
Module Slot	Analog input (slot 1 - 8): -10 dB*1, 10 kΩ, unbalanced; Digital input (slot 1 - 4): 24 bit/48 kHz; MIX output (slot 1 - 8): -14 dB*1, 330 Ω (CH 1 prefader output), unbalanced; Digital output (slot 5 - 7): 24 bit/48 kHz; Power supply (slot 1 - 8): +24 V, -24 V, +6 V DC		
Digital Audio Signal Reference Level	-20 dBFS		
Power Bandwidth	(D): 20 - 20,000 Hz, 0.02% THD (T): 50 - 20,000 Hz, 0.5% THD	20 - 20,000 Hz, 0.008% THD	
Frequency Response	Power amplifier section: 20 - 20,000 Hz, +0, -1 dB Analog input module to speaker output: 20 - 20,000 Hz, +1, -3 dB		20 - 20,000 Hz, +1, -3 dB
Total Harmonic Distortion	Power amplifier section: 0.008% (22 kHz LPF, 1 kHz, rated power) Analog input module to speaker output: 0.008% (22 kHz LPF, 1 kHz, rated power)	Power amplifier section: 0.0008% (22 kHz LPF, 1 kHz, rated power) Analog input module to speaker output: 0.008% (22 kHz LPF, 1 kHz, rated power)	0.008% (at 22 kHz LPF, 1 kHz, +10 dB*1 output)
S/N Ratio	At Input short, 20 - 20,000 Hz, set to ALL FLAT or OFF setting; Output volume min.: 90 dB (preamplifier output); Output volume max.: 61 dB (preamplifier output, input 1 volume: 0 dB, other inputs: OFF); Power amplifier section: 110 dB		At Input short, 20 - 20,000 Hz, set to ALL FLAT or OFF setting; Output volume min.: 90 dB; Output volume max.: 61 dB (Input 1 volume: 0 dB, Other Inputs: OFF)
Cross Talk	Over 64 dB (at 20 kHz)		
Tone Control	Bass: ±12 dB (at 100 Hz), Treble: ±12 dB (at 10 kHz)		
Parametric Equalizer	10 bands, Frequency: 20 - 20,000 Hz, 31 points, Variable range: ±12 dB, Q: 0.3 - 5		
Speaker Equalizer	10 (set up software has 30 TOA speaker presets)		
High-pass Filter	-12 dB/oct, Variable frequency range: 20 - 20 kHz, 31 points		
Low-pass Filter	-12 dB/oct, Variable frequency range: 20 - 20 kHz, 31 points		
Compressor	Depth: 1 - 5		
Delay	0 - 40 ms (1 ms steps), maximum 40 ms (CH 1 + CH 2) (mixer mode only)		
Scene/Event Memory	32		
Auxiliary Function	Key lock function		
Control Input/Output	RS-232C*2, D-sub connector (9P, female) Control input: 4 inputs, no-voltage make contact input, open voltage: 3.3 V DC, short-circuit current: Under 1 mA, removable terminal block (14 pins) Control output: 4 outputs, open collector output, withstand voltage: 27 V DC, control current: 50 mA, removable terminal block (14 pins) Remote volume: 2 channels, connect a 10 kΩ/linear taper variable resistor or input DC voltage of 0 to +10 V, removable terminal block (14 pins)		
Operating Temperature	-10°C to +40°C (14° F to 104° F)		
Operating Humidity	35% to 80% RH (no condensation)		
Finish	Panel: Aluminum, hair-line, black; Case: Surface-treated steel plate, black, paint		
Dimensions	16.54" (W) x 4.24" (H) x 13.98" (D) 420 (W) × 107.6 (H) × 355 (D) mm	16.54" (W) x 4.24" (H) x 15.55" (D) 420 (W) × 107.6 (H) × 395 (D) mm	16.54" (W) x 4.24" (H) x 13.9" (D) 420 (W) × 107.6 (H) × 353 (D) mm
Weight	28.66lbs (13kg)	24.25lbs (11kg)	13.23lbs (6kg)
Accessory	Power cord (6.56ft [2m]) x 1, Rack mounting bracket x 2, Bracket mounting screw x 4, Blank panel x 7, Blank panel mounting screw x 14, Removable terminal plug (3 pins) x 1, Removable terminal plug (7 pins) x 1, Removable terminal plug (14 pins) x 1 , CD x 1		

AN-001T
Ambient Noise Control Module

MAIN FEATURES
- Automatically adjusts output gain to compensate for changes in ambient noise level
- Each input can be assigned to control a specific output
- Two inputs with +24VDC phantom power for condenser mics
- 14 preset gain ratios
- Accessory sensing microphone available, model AN-9001
- Maximum two per chassis

Power Source:+24V DC, -24V DC, +6V DC
Current Consumption: 20mA (at +24V DC), 20mA (at -24V DC), 60mA (at +6V DC)
Input: Sensor input (Ambient noise sensor microphone input): 2 channels, 3 k ohms (when the phantom power is ON)/10 kΩ (when the phantom power is OFF), electronically-balanced, removable terminal block (3 pins)
Input Sensitivity: -60, -54, -48, -42, -36, -30, -24, -18, -10dB* (selectable)
Phantom Power: +24V DC
A/D Converter: 24 bit ΔΣADC
Sampling Frequency: 48 kHz

Ambient Noise Control Function: Sensor input reference level adjustment function/Maximum output signal level control: -15 to 0 dB/Minimum output signal level control: -18 to -3 dB/Sample time setting: 10 s, 15 s, 20 s, 30 s, 1 min, 2 min, 3 min, 5 min/Gain ratio setting (Ambient noise: Output signal level): 6:3, 5:3, 4:3, 3:3, 3:4, 3:5, 3:6, 6:-3, 5:-3, 4:-3, 3:-3, 3:-4, 3:-5, 3:-6,
Operating Temperature: 14°F to +104°F
Finish: Panel: Aluminum, hair-line
Dimensions: 1.4 (W) × 3 (H) × 3.6 (D) in
Weight: 82 g
Accessory: Removable terminal plug (3 pins) × 2, Module mounting screw × 2
Option: Ceiling mount microphone: AN-9001

*0 dB = 1 V

D-001T
Dual Mic/Line Input Module with DSP

MAIN FEATURES
- Two balanced Mic / Line inputs
- Digital signal processing (10-Band Parametric EQ, Bass/ Treble, Loudness, High and Low Pass Filters, Compressor)
- Adjustable sensitivity (nine levels, -60 to -10 dBV)
- Phantom power (24 VDC)
- Removable terminal block
- Maximum four per chassis
- Required for VOX (Voice-Operated Switch) function and input level metering

Power Source: +24V DC, -24V DC, +6V DC
Current Consumption: 20mA (at +24 V DC), 20mA (at -24V DC), 60 mA (at +6V DC)
Input: 2 channels, 3 kΩ (when the phantom power is ON)/ 10 k ohms (when the phantom power is OFF), electronically-balanced, removable terminal block
(3 pins)
Input Sensitivity: -60, -54, -48, -42, -36, -30, -24, -18, -10dB* (selectable)
Frequency Response: 20 – 20,000Hz, +1, -3 B
THD + N: 0.008% (at 1 kHz, 20 – 20,000Hz BPF, Input sensitivity: -10dB)
Input Equivalent Noise: Under -112dB (at 20Hz – 20kHz BPF, Input short, Input sensitivity: -60dB)
S/N Ratio: Over 73dB (at 20Hz – 20kHz BPF, Input short, Input sensitivity: -10dB)

Crosstalk: Over 75dB (at 20kHz, Input sensitivity: -10dB)
CMRR: Over 62dB (at 1kHz, Input sensitivity: -60dB)
A/D Converter: 24 bit ΔΣADC
Sampling Frequency: 48 kHz
Tone Control: Bass: ±12 B (at 100Hz),
Treble: ±12dB (at 10kHz)
Parametric Equalizer: 10 bands, Frequency: 20Hz – 20kHz, 31 points, Variable range: -12dB, Q: 0.3 – 5
High-pass Filter: -12dB/oct, Variable frequency range: 20Hz – 20kHz, 14 points
Low-pass Filter: -12dB/oct, Variable frequency range: 20Hz – 20kHz, 8 points
Compressor: Depth: 1 – 5
Phantom Power: +24V DC
Operating Temperature: 14°F to +104°F
Finish: Panel: Aluminum, hair-line
Dimensions: 1.4 (W) × 3 (H) × 3.6 (D) in
Weight: 82g
Accessory: Removable terminal plug (3 pins) × 2, Module mounting screw × 2

*0dB = 1V

C-001T
Input/Output Control Module

MAIN FEATURES
- Eight assignable control inputs for activating event volume, up/down, mute, power on/off, emergency mute or synch on/off
- Eight assignable control outputs for activating external relays
- Removable terminal block
- Maximum one per chassis

Power Source: 6V DC
Current Consumption: 15mA
Control Input: 8 channels, open voltage: 3.3V DC, short-circuit current: under 1mA, removable terminal block (9 pins)
Control Output: 8 channels, open collector output, withstand voltage: 27V DC, control current: max. 50mA, removable terminal block (9 pins)
Operating Temperature: 14°F to +104°F
Finish: Panel: Aluminum, hair-line
Dimensions: 1.4 (W) × 3 (H) × 3.6 (D) in
Weight: 62g
Accessory: Removable terminal plug (9 pins) × 2, Module mounting screw × 2

D-001R
Line Input Module

MAIN FEATURES
with DSP
- Two RCA phono inputs per channel provides stereo summing
- Digital signal processing
  - 10-Band parametric EQ
  - Bass/Treble
  - Loudness
  - High and low pass filters
  - Compressor

Power Source: +24V DC, -24V DC, +6V DC
Current Consumption: 20mA (at +24 V DC), 20mA (at -24V DC), 60 mA (at +6V DC)
Input: 2 channels, 2RCA/ch mixed, 10kΩ, unbalanced, RCA pin jack
Input Sensitivity: -60, -54, -48, -42, -36, -30, -24, -18, -10dB* (selectable)
Frequency Response: 20Hz – 20kHz, +1, -3 B
THD + N: 0.008% (at 1kHz, 20Hz – 20kHz BPF, Input sensitivity: -10dB)
S/N Ratio: Over 70dB (at 20Hz – 20kHz BPF, Input short, Input sensitivity: -10dB)

Crosstalk: Over 75dB (at 20kHz, Input sensitivity: -10dB)
A/D Converter: 24 bit ΔΣADC
Sampling Frequency: 48 kHz
Tone Control: Bass: ±12 B (at 100Hz),
Treble: ±12dB (at 10kHz)
Parametric Equalizer: 10 bands, Frequency: 20Hz – 20kHz, 31 points, Variable range: ±12dB, Q: 0.3 – 5
High-pass Filter: -12dB/oct, Variable frequency range: 20Hz – 20kHz, 31 points
Low-pass Filter: -12dB/oct, Variable frequency range: 31 points, 31 points
Compressor: Depth: 1 – 5
Phantom Power: +24 V DC
Operating Temperature: 14°F to +104°F
Finish: Panel: Aluminum, hair-line
Dimensions: 1.4 (W) × 3 (H) × 3.6 (D) in
Weight: 82g
Accessory: Module mounting screw × 2
*0 dB = 1 V

T-001T
Dual Line Output Expansion Module with DSP

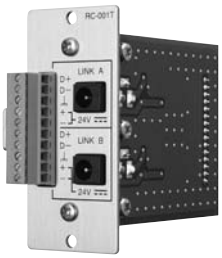
MAIN FEATURES
- Two balanced line outputs
- Digital signal processing (10-Band Parametric EQ, Bass/ Treble, Loudness, High and Low Pass Filters, Compressor, TOA speaker EQ presets)
- Removable terminal block
- Maximum three per chassis

Power Source: +24V DC, -24V DC, +6V DC
Current Consumption: 35mA (at +24V DC), 35mA (at -24V DC), 60mA (at +6V DC)
Output: 2 channels, max. +20dB* (at 10 kΩ load), 600Ω, electronically-balanced, removable terminal block (3 pins)
Frequency Response: 20Hz – 20kHz, +1, -3dB
THD + N: 0.005% (at 1kHz, 20Hz – 20kHz BPF, 5V output, 10 kohms load)
S/N Ratio: Over 73dB (at 20Hz – 20kHz BPF)
Residual Noise: Under -91dB (at 20Hz – 20kHz BPF, VOL: -70dB)
Crosstalk: Over 87dB (at 20kHz)
D/A Converter: 24 bit ΔΣDAC
Sampling Frequency: 48 kHz

Tone Control: Bass: ±12dB (at 100Hz), Treble: ±12dB (at 10kHz)
Parametric Equalizer: 10 bands, Frequency: 20Hz – 20kHz, 31 steps, Variable range: ±12dB, Q: 0.3 – 5
Speaker Equalizer: 10 (setup software has 30 TOA speaker presets)
High-pass Filter: -12dB/oct, Variable frequency range: 20Hz – 20kHz, 31 points
Low-pass Filter: -12 dB/oct, Variable frequency range: 20Hz – 20kHz, 31 points
Compressor: Depth: 1 – 5
Delay: 0 – 40 ms (1 ms step), maximum 40 ms (CH 1 + CH2), mixer mode only
Operating Temperature: 14°F to +104°F
Finish: Panel: Aluminum, hair-line
Dimensions: 1.4 (W) × 3 (H) × 3.6 (D) in
Weight: 82 g
Accessory: Removable terminal plug (3 pins) × 2, Module mounting screw × 2

*0 dB = 1 V

RC-001T
Remote Control Module



MAIN FEATURES
RS-485 Control Module
- Allows use of up to 16 RS-485 remote control panels
- Bi-directional RS-485 communication provides control and status feedback display for each remote function
- Dual ports allow independent home runs for up to 8 modules ea.
- 24 VDC power adapter (optional accessory AD-246) required for each port used
- May be used in any control option slot on 9000M2 frame and even in addition to a C-001T when spare slots are available
- Required Module: ZM-9011, ZM-9012, ZM-9013, ZM-9014
- AD-246 - AC adapter

Power Source: 6V DC
Current Consumption: 30mA or less
Terminal: Removable terminal block (10 pins)

Power Input: 24V DC input x 2 (Applicable AC adapter: AD-246 (option), power supply to Remote Control Panels)
Adaptable DC plug: 9.5 (L) × 5.5 (OD) × 2.1 (ID)mm
Connection Cable: Shielded CPEV cable (paired data line and paired power line) or Category 5 twisted pair cable for LAN (CAT5-STP)
Maximum Cable Distance: 800m in total
Connectable Number of Remote Control Panels: Maximum 16 units (2 link connectors used)
Operating Temperature: 14°F to +104°F
Operating Humidity: 35% to 80% RH (no condensation)
Finish: Panel: Aluminum, hair-line
Dimensions: 1.4 (W) × 3 (H) × 3.6 (D) in
Weight: 80g
Accessory: Removable terminal plug (10 pins) × 1, Module mounting screw × 2

ZP-001T
Telephone Zone Paging Module

MAIN FEATURES
Telephone DTMF Zone Paging
- Telephone access paging to up to eight zones
- Uses DTMF dialing to access amplifier and/or line outputs
- Dial up to eight output zones in one operation
- Analog extension or page port compatible
- Page port operation requires contact closure activation
- RJ-11 telephone jack and removable terminal blocks
- Maximum one per chassis

Power Source: +24V DC, +6V DC
Current Consumption: 38mA (at +24V DC), 18mA (at +6V DC)
Number of Line: 1 line
Type of Selectable Signal: DTMF signal
Signaling System: Loop-Start (or Ground-Start, selectable)

TEL Line: 0dB, 600Ω, balanced, transformer-isolated, loop voltage: 24V DC or more which should be supplied from the PABX, RJ11 connector
Paging Input: 0dB, 600Ω, balanced, transformer-isolated audio input, removable terminal block (4 pins)
Control Input: 1 channel, no-voltage make contact, open voltage: 5V DC, short-circuit current: 0.5mA, removable terminal block (4 pins)
Control Output: 4 channels, open collector output (isolated), withstand voltage: 35V DC, control current: max. 50mA, removable terminal block (4 pins)
Operating Temperature: 14°F to +104°F
Finish: Panel: Aluminum, hair-line
Dimensions: 1.4 (W) × 3 (H) × 3.6 (D) in
Weight: 153 g
Accessory: Removable terminal plug (4 pins) × 3, Module mounting screw × 2

ZM-9001
Remote Panel

MAIN FEATURES
- Six buttons to activate preset selection or volume up/down
- Wiring: only one pair to chassis remote volume terminals
- Max. loop resistance: 100 ohms (3000 ft. 22AWG)
- Fits one gang electrical box
- Maximum two ZM-9001/ZM-9002 per chassis
- Uses built in 9000M2 REMT VOL port

Applicable Cable: Single conductor shielded cable
Line Resistance: 50Ω or less (per line)
Terminal: M3 screw terminal, distance between barriers: 7.62mm
Operating Temperature: 14°F to +104°F
Finish: Surface-treated steel plate, white, paint
Dimensions: 8.2 (W) × 5 (H) × 1.8 (D) in
Weight: 170 g
Accessory: Box mounting screw (No. 6 – 32UNC x 30) × 2, Box mounting screw (M4 × 30) × 2, Panel mounting screw × 2

Note: Since no electrical box is supplied with the unit, prepare it separately.

ZM-9002
Remote Panel

MAIN FEATURES
Remote Volume Switch Panel
- Four push buttons to activate preset selection or volume up/down
- Volume control knob
- Wiring: only one pair to chassis remote volume terminals
- Max. loop resistance: 100 ohms (3000 ft. 22AWG)
- Fits one gang electrical box
- Maximum two ZM-9001/ZM-9002 per chassis
- Uses built in 9000M2 REMT VOL port

Applicable Cable: Single conductor shielded cable
Line Resistance: Under 50 ohms (per line)
Terminal: M3 screw terminal, distance between barriers: 7.62mm
Operating Temperature: 14°F to +104°F
Finish: Surface-treated steel plate, white, paint
Dimensions: 8.2 (W) × 5 (H) × 2.2 (D)in
Weight: 170g
Accessory: Box mounting screw (No. 6 – 32UNC x 30) × 2, Box mounting screw (M4 × 30) × 2, Panel mounting screw × 2

Note: Since no electrical box is supplied with the unit, prepare it separately.

ZM-9003
Remote Panel

MAIN FEATURES
Contact Closure Remote
- Fits in a standard dual-gang electrical box
- Removable screw terminal connector block
- Works with contact inputs on 9000M2 mainframe and on C-001T
- Two momentary buttons and four latching buttons
- May be assigned to control program change, volume up/down, channel on/mute, emergency mute, power and paging prohibit function
- Removable terminal block
- Used built in 9000M2 REMT VOL port

Line Resistance: 250Ω or less (per line)
Terminal: Removable terminal block (7 pins)
Operating Temperature: 14°F to +104°F
Finish: Surface-treated steel plate, white, paint
Dimensions: 4.7 (W) × 5 (H) × 2.1 (D)in
Weight: 375g
Accessory: Box mounting screw × 4, Panel mounting screw × 4, Panel mounting screw × 2, Removable terminal plug (7 pins) × 1

ZM-9011
Remote Panel

MAIN FEATURES
Assignable Remote Button Panel
- Fits in a standard dual-gang electrical box
- Four assignable buttons each with LED status indicator can control Xpoint settings (on/off, select), paging activation, scene and relay activation
- Assignable ID rotary adjustment on box
- Supplied matching decor plate
- Required RC-001T

Power Source: 24V DC (supplied from RC-001T)
Current Consumption: 50mA or less
Terminal: Removable terminal block (10 pins) **Connection Cable:** Shielded CPEV cable (paired data line and paired power line) or Category 5 twisted pair cable for LAN (CAT5-STP)
Operating Section: 4 function buttons
Indicator: 4 function indicators (green LED's)
Operating Temperature: 14°F to +104°F
Operating Humidity: 35% to 80% RH (no condensation)
Finish: Surface-treated steel plate, white, paint
Dimensions: 8.2 (W) × 5 (H) × 1.9 (D)in
Weight: 160g
Accessory: Box mounting screw (N0.6-32UNC × 30) × 2, Box mounting screw (M4 × 30) × 2, Panel mounting screw × 2, Removable terminal plug (10 pins) × 1

Note: Since no electrical box is supplied with the unit, prepare it separately.

ZM-9012
Remote Panel

MAIN FEATURES

Assignable Volume Controller

- Fits standard single-gang electrical box
- Rotary encoder can be assigned to control any input or output volume
- Multiple input or outputs may be “ganged” for master volume control
- Multi-segment LED indicator provides visual volume level status
- Supplied matching decor plate
- Removable terminal block
- Requires RC-001T

Power Source: 24V DC (supplied from RC-001T)
Current Consumption: 50mA or less
Terminal: Removable terminal block (10 pins) **Connection Cable:** Shielded CPEV cable (paired data line and paired power line) or Category 5 twisted pair cable for LAN (CAT5-STP)
Operating Section: 1 volume control
Indicator: Level indicators (green LED's)

Operating Temperature: 32°F to +104°F
Operating Humidity: 35% to 80% RH (no condensation)
Finish: Surface-treated steel plate, white, paint
Dimensions: 8.2 (W) × 5 (H) × 2.3 (D)in
Weight: 160g
Accessory: Box mounting screw (N0.6-32UNC × 30) × 2, Box mounting screw (M4 × 30) × 2, Panel mounting screw × 2, Removable terminal plug (10 pins) × 1

Note: Since no electrical box is supplied with the unit, prepare it separately.

ZM-9013
Remote Panel

MAIN FEATURES

Assignable Remote Button Panel

- Fits in a standard dual-gang electrical box
- Eight assignable buttons each with LED status indicator can control Xpoint settings (on/off, select), paging activation, scene and relay activation
- Assignable ID rotary adjustment on box
- Supplied matching decor plate
- Removable terminal block
- Required RC-001T

Power Source: 24V DC (supplied from RC-001T)
Current Consumption: 50mA or less
Terminal: Removable terminal block (10 pins)
Connection Cable: Shielded CPEV cable (paired data line and paired power line) or Category 5 twisted pair cable for LAN (CAT5-STP)

Operating Section: 8 function buttons
Indicator: 8 function indicators (green LEDs)
Operating Temperature: 32°F to +104°F
Operating Humidity: 35% to 80% RH (no condensation)
Finish: Surface-treated steel plate, white, paint
Dimensions: 4.7 (W) × 5 (H) × 2 (D)in
Weight: 300g
Accessory: Box mounting screw (N0.6-32UNC × 30) × 4, Box mounting screw (M4 × 30) × 4, Panel mounting screw × 4, Removable terminal plug (10 pins) × 1

Note: Since no electrical box is supplied with the unit, prepare it separately.

ZM-9014
Remote Panel

MAIN FEATURES

Assignable Remote Button Panel w/Volume Control

- Fits in a standard dual-gang electrical box
- Four assignable buttons each with LED status indicator can control Xpoint settings (on/off, select), paging activation, scene and relay activation
- Assignable ID rotary adjustment on box
- Supplied matching decor plate
- Removable terminal block
- Required RC-001T

Power Source: 24V DC (supplied from RC-001T)
Current Consumption: 50mA or less
Terminal: Removable terminal block (10 pins) **Connection Cable:** Shielded CPEV cable (paired data line and paired power line) or Category 5 twisted pair cable for LAN (CAT5-STP)
Operating Section: 4 function buttons, 1 volume control

Indicator: 4 function indicators (green LEDs), Level indicators (green LEDs)
Operating Temperature: 32°F to +104°F
Operating Humidity: 35% to 80% RH (no condensation)
Finish: Surface-treated steel plate, white, paint
Dimensions: 4.7 (W) × 5 (H) × 2.3 (D)in
Weight: 300g
Accessory: Box mounting screw (N0.6-32UNC × 30) × 4, Box mounting screw (M4 × 30) × 4, Panel mounting screw × 4, Removable terminal plug (10 pins) × 1

Note: Since no electrical box is supplied with the unit, prepare it separately.

AN-9001
Ambient Noise Sensing Microphone

MAIN FEATURES

- Ceiling or wall-mount condenser microphone
- Fits one gang electrical box
- Use with AN-001T module or DP-L2 processor

Type: Electret condenser microphone
Phantom Power: 14-26V DC
Current Consumption: 7mA (at 24V DC)
Directivity: Omnidirectional (hemispherical)
Impedance: 200Ω
Rated Sensitivity: -5dB (1kHz, 0 dB = 1V/Pa)

Frequency Response: 100Hz – 10kHz
Output Terminal: Removable terminal block (3 pins)
Operating Temperature: 14°F to +104°F
Finish: Panel: ABS resin, white/
Frame, Case: Surface-treated steel plate
Dimensions: 5.1 × 1.5 (D)in
Weight: 170g
Accessory: Removable terminal plug (3 pins) × 1, Box mounting screw (No.6-32UNC x 30) × 2, Box mounting screw (M4 x 30) × 2
Option: 9000 series plug-in module: AN-001T

Note: Since no electrical box is supplied with the unit, prepare it separately.

SS-9001
Speaker Selector

MAIN FEATURES

4-Zone Speaker Selector

- Switch up to four speaker lines on one amplifier output
- Two speaker amplifier inputs for Paging/BGM applications
- Works with built in 9000M2 I/O control output or optional C-001T module only
- Wall-mount bracket included
- Requires optional 24VDC power supply, model AD-246

Power Req.: Supplied from the optional AD-246 AC adapter or an external 24 V DC/200 mA power supply.
Current Consumption: 120mA

Control Signal: No-voltage make contact input (polarized), open voltage: 24V DC, short-circuit current: 3mA
Control Power: Under 240W (70V/100V line)
Speaker Terminal: Removable terminal block (2 pins)
Control Terminal: Removable terminal block (10 pins)
Operating Temperature: 14°F to +104°F
Finish: Case: Surface-treated steel plate
Dimensions: 4.4 (W) × 7.8 (H) × 1.2 (D) in
Weight: 1.2lbs
Accessory: Removable terminal plug (2 pins) × 6, Removable terminal plug (10 pins) × 1, Cord clamp × 1, Mounting screw × 4
Option: AC adapter: AD-246

Q-RM9012
Remote Microphone

MAIN FEATURES
- High-sensitivity electret-condenser gooseneck mic for clear voice
- 12 zone select buttons, All Call, Clear
- 12 Contact Outs corresponding to buttons (RJ-45 connector for use with shielded Cat5 wiring)
- Connects to C-IN on 9000M2 (mainframe & equipped with C-001T)
- Supplied with AD-246 AC Adapter

Power Source: 24 V DC from AC adaptor AD-246 or equivalent
Power Consumption: 80mA or less
Audio Output: 0 dB (*1), 600 Ohms, transformer balanced, RJ45 connector
Distortion: 1% or less
Frequency Response: 100 - 20,000Hz
S/N Ratio Microphone: 60dB or more Unidirectional electret condenser microphone
Operating Temperature: 14°F to +104°F
Control Output: 12 channels, open collector output, withstand voltage: 27V DC, control current: max. 50 mA, (2) RJ45 connectors
Number of Keys: 12 zone selection keys, All call key, Cancel key, Talk key
Volume Control: Microphone volume control
Finish: ABS resin, Black
Dimensions: 7.5 (W) x 3 (H) X 8.5 (D) in (Gooseneck microphone excluded)
Weight: 1.7lbs
Accessory: AC Adaptor: AD-246

Q-SS9012
Speaker Selector

MAIN FEATURES
- 12 contact inputs and 12 speaker outputs. Power amp input is split into 12 zones with activation via contact closure
- Possible to expand number of 9000M2 paging zones along with conventional output zones (T-001T) up to 19 zones
- Can facilitate paging over BGM by switching between BGM output (amp input 2) and Page output (amp input 1)
- May work with internal or external amplifier
- 19" rack-mountable (using optional MB-15B)
- Supplied with AD-246 AC Adapter

Power Source: 24 V DC from AC adaptor AD-246 or equivalent
Power Consumption: 400mA or less
Power Handling: 250W or less (70V/100V line) per channel (IN1, IN2)
Control Input: 12 channels, dry (no voltage) contact closures, open voltage: 3.3V DC, short-circut current: under 1 mA, removable terminal block (24 pins)
Speaker Terminal: Removable Terminal Block (2 pins, IN1, IN2, Zone1 - 12)
Control Terminal: Removable Terminal Block (24 pins
Operation Temperature: 14°F to +104°F
Finish: Case: Surface-treated steel plate, Black
Dimensions: 16.5 (W) x 1.7 (H) x 4.8 (D) in
Weight: 3.5lbs
Accessory: Removable Terminal plug (2pins)
Removable Terminal Plug (12 pins)
Removable Terminal Plug (14 pins)
Supplied Accessory: AC adaptor: AD-246
Option: Rack mount bracket: MB-15B, Wall mount bracket: YC-850

900 Series Amplifiers

W-906A (60W)
W-912A (120W)
(UL version) In-Wall Amplifier

MAIN FEATURES
- Modular design allows fast and easy custom configurations
- Engineered for high performance with wide frequency response, very low noise and distortion, and excellent output regulation
- Six module slots accept TOA plug-in modules for unmatched flexibility, expandable to eight slots with optional kit, model WE-2
- Flush or surface-mount with optional back boxes - BX-9F (flush-mount) and BX-9S (surface-mount)
- One octave nine band graphic equalizer
- High and low pass filters
- Compressor prevents overload and distortion
- 5 year warranty

Power Source: 120V AC, 60Hz
Power Consumption: W-906A: 100W/**W-912A:** 180W
Output Power: W-906A: 60W RMS/**W-912A:** 120W RMS
Power Bandwidth: (D); 20Hz – 20kHz, 0.5% THD/ (T); 50Hz – 20kHz, 0.5% THD
Frequency Response: (D); 30Hz – 20kHz, ±1dB/(T); 30Hz – 15kHz, ±1dB/(T); 30Hz – 20kHz, +1dB/-2dB
THD: 0.02% at 1kHz, Rated Output
Inputs: Six Input Ports: 100mV/10kΩ/Each port accepts any input module except T-015S, (Use T-01S only in port #5 or #6)/ One Bridging Input/Output: 100mV/3.3kΩ
Outputs: (T); 8Ω, 25V & amp; 70V, balanced/(D); 4Ω, unbalanced
Output Regulation (1kHz): (D); Under 0.5dB, No Load to Full Load/(T); Under 1.0dB, No Load to Full Load
S/N Ratio (Band Pass: 20Hz - 20kHz): Controls OFF: 90dB/ Equalizer IN: 88dB/Master Volume Max.: 77dB/ Compressor IN: 84dB
Compression: Attack Time: No Greater Than 2msec./ Compression Range: 30dB/Release Time: Variable 20msec. to 2sec./Distortion: Less than 1%
Equalization: 9-band One octave Graphic Equalizer/Center Frequencies: ISO 63. 125, 250, 500, 1k, 2k, 4k, 8k, 16kHz/ Equalization Range: ±12dB
Filters: High-pass Filter: 180Hz, 12dB/octave/Low-pass Filter: 7kHz, 12dB/octave
Indicators: 1 Power LED, 1 Peak LED
Protection Circuitry: Built-in with 2 AC Fuse (1 inside) and 1 Output Circuitry/Output Circuitry Protection when Heatsink Temperature Overheats
Connectors: Input #1 to #6: Card-edge Connector/Output: Screw-terminal strip/Bridging Input/Output: Screw-terminal strip/ Mute: Screw-terminal strip
User's Space (Blank Panel): Size: 4 (W) × 2.4 (H) × 3.8 (D)in/ Effective Space for Customizing/Optional expanding kit WE-2 may be loaded
Weight: W-906A: 30.2lbs/**W-912A:** 38.1lbs (without input modules and back box)
Finish: Silver
Accessories: Volume cover × 3
Associated Equipment: Plug-in Module for Input: M-01S, U-01S, B-01S, L-01S, I-01S/Plug-in Module for Input with MUTE: U-12S, B-11S, L-11S, M-11S/Plug-in Module for Input with Remote Volume Control Facility: M-21S, U-21S, B-01S, L-01S, I-01S/Plug-in Module for Line Output: T-01S/Plug-in Module for Tone Signal: S-01S, S-02S, S-03/Volume control cover: YA-910/ Expanded Kit: WE-2

M-900MK2
(UL version)
8-Channel Mixer Preamplifier

TOA's **M-900MK2 Mixer Preamplifier** controls and mixes up to eight independent input signals and delivers up to +20 dBm of output power. Optional plug in modules are available for use with mixer preamplifier to provide versatility for a wide range of operating applications.

MAIN FEATURES
- Eight module slots accept any combination of TOA plug-in modules for custom system configurations
- Balanced, transformer-isolated output with selectable impedance, screw terminal connector and protective cover plate
- Dual mute bus permits multiple levels of paging priority using optional mute-type modules
- External mute terminals for activating mute function with external switch-closure
- Remote master volume terminals for control with an external 10k ohm linear-taper potentiometer
- Individual channel and master volume controls
- Auxiliary output for connecting an external mixer or recording device
- Bridging input/output for input expansion or recording device
- Normal, clip, power, protect, and signal indicators provide unit status
- Optional rack-mount kit, model MB-25B (2 RU)
- 5 year warranty

Power Source: 120V AC, 60Hz (or 220 – 230/240V AC, 50/60Hz)
Power Consumption: 18W (or 21VA)
Rated Output: +4dBm, +20dBm (max.)
Power Bandwidth: 30Hz – 20kHz, +20dBm 0.5% THD
25Hz – 20kHz, +18dBm 0.5% THD
Frequency Response: 20Hz – 20kHz, ±1dB
THD: 0.01% at 1kHz, rated output
Input: Eight input ports: Each port accepts any input modules. One bridging input/output
Input Sensitivity/Impedance: Input Port #1 to #8: 100mV/10kΩ Bridging Input/Output 100mV/3.3kΩ
Output: Main: Balanced, 150/600Ω
AUX: Unbalanced, 10kΩ, 0dBm
Output Regulation (1kHz): Less than 1.5dB, no load to full load
S/N Ratio (Band Pass 20 Hz– 20kHz) with Tone defeat switch on: Master volume min.: 90dB/Master volume max.; 77dB
Tone Controls: Bass: ±10dB at 100Hz, Treble: ±10dB at 10kHz

Controls: 8 Input gain control, 1 Master gain control, 1 Bass tone control, 1 Treble tone control, 1 Power ON/OFF switch, 1 Tone defeat switch
Indicator: 1 Power LED, 1 Protect LED, 1 Signal LED, 1 Normal LED, 1 Peak LED
Protection: Self-protection, with AC fuse (inside)
Connectors: Input No. 1 to No. 8: Card-edge connector/Bridging, Aux output: RCA phone jack/Output: Screw-terminal strip/Mute, Remote VR: Screw-terminal strip/AC inlet: 3-pin grounding type
Operation Temperature: 14°F to +140°F
Finish: Black
Dimensions: 16.5 (W) × 3.9 (H) × 12.1 (D)in
Weight: 11.7lbs
Accessory: Volume control cover (YA-920) × 4
Option: Rack mounting bracket: MB-25B

A-903MK2 (30W)
A-906MK2 (60W)
A-912MK2 (120W)
(UL version)
8-Channel Mixer Power Amplifier

MAIN FEATURES
- Eight module slots accept any combination of TOA plug-in modules for custom system configurations
- Direct low-impedance output mode bypasses output transformer
- Dual mute bus permits multiple levels of paging priority using optional mute-type modules
- External mute terminals for activating mute function with external switch-closure
- Low cut switch to limit low frequency response
- Bridging input/output for input expansion or recording device
- Over-current and thermal protection circuitry prevents potential damage from overload, short-circuit and over-heating
- Optional rack-mount kit, model MB-25B (2 RU)
- 5 year warranty

	A-903MK2	A-906MK2	A-912MK2
Type	8-channel mixer power amplifier		
Power Requirement	AC mains, 120 V, 60 Hz		
Power Consumption	60 W	100 W	180 W
Output Power	30 W RMS	60 W RMS	120 W RMS
Power Band Width	(D) 20 - 20,000 Hz, 0.5% THD, (T) 50 - 20,000 Hz, 0.5% THD		
Frequency Response	(D) 20 - 20,000 Hz, ±1 dB (T) 20 - 15,000 Hz, ±1 dB, (T) 20 - 20,000 Hz, +1 dB, -3 dB		
T.H.D	0.02% at 1 kHz, rated output		
Inputs	Eight Input Ports: Each port accepts any input modules. One Bridging Input/Output		
Input Sensitivity /Impedance	Input Port #1 to #8: 100 mV/10 kΩ Bridging Input/Output: 100 mV/3.3 kΩ		
Preamp OUT /Power Amp IN	1000 mV into 600 Ω/1000 mV, 10 kΩ		
Outputs	Main (T): 4 Ω, 25 and 70 volts, balanced, Main (D): 8 Ω, unbalanced Aux: 10 kΩ, 1 V		
Output Regulation (1kHz)	(D) Less than 0.5 dB, no load to full load, (T) Less than 1.0 dB, no load to full load		
S/N Ratio (Band Pass 20 - 20,000 Hz) Tone defeat switch on	Master volume min: 90 dB Master volume max: 77 dB Power amplifier only: 105 dB		
Tone Controls	Bass: ±10 dB at 100 Hz, Treble: ±10 dB at 10 kHz		
Controls	8 Input gain control 1 Master gain control 1 Bass control 1 Treble control 1 Power ON/OFF switch 1 Tone defeat switch 1 Low-Cut switch (60 Hz, 6 dB/octave)		
Indicators	1 Power LED, 1 Protect LED, 1 Signal LED, 1 Normal LED, 1 Peak LED		
Protection	Self-protection, with AC fuse (inside)		
Connectors	Input No.1 to No.8: Card-edge connector Bridging, Mixer preamp. output, Power amp. input, Aux output: RCA phono jack Output: Screw-terminal strip Mute, Remote VR: Screw-terminal strip AC outlet: 3-pin grounding type AC power cord/plug: SJT, 3-prong type		
Temperature Range	-10°C - +60°C (12°F - 140°F)		
Finish	Black		
Dimensions (W×H×D)	16.54" (W) x 3.90" (H) x 12.52" (D) 420 × 99.1 × 318 mm	16.54" (W) x 3.90" (H) x 14.09" (D) 420 × 99.1 × 358 mm	
Weight	17.20lbs (7.8kg)	21.16lbs (9.6kg)	25.13lbs (11.4kg)
Accessories	Volume control cover (YA-920) x 4		
Option	Rack mounting bracket (MB-25B)		

P-906MK2 (60W)
P-912MK2 (120W)
(UL version)
Power Amplifier

P-924MK2 (240W)
(UL version)
Power Amplifier

TOA's **P-900MK2 Series Power Amplifier** delivers up to 60/120/240 watts of output power. The power amplifier has an input port to accept one plug-in module.

MAIN FEATURES
- Modular single channel power amplifiers for paging, background/ foreground music distribution and music/ messaging-on-hold
- Input module slot accepts most TOA plug-in modules for custom system configurations
- Direct low-impedance output mode bypasses output transformer
- Direct input for connecting an external mixer or other source
- Selectable input sensitivity to accommodate high or low input levels
- Low cut switch to limit low frequency response
- Optional rack-mount kits: P-906/P-912MK2: MB-25B (2 RU) P-924MK2: MB-35B (3 RU)
- 5 year warranty

	P-906MK2	P-912MK2	P-924MK2
Type	Power amplifier		
Power Requirement	AC mains, 120 V, 60 Hz		
Power Consumption	100 W	180 W	120 V / 3 A
Output Power	60 W RMS	120 W RMS	(D) 240 W RMS (T) 220 W RMS
Power Band Width	(D) 20 - 20,000 Hz, 0.5% THD (T) 50 - 20,000 Hz, 0.5% THD		
Frequency Response	(D) 20 - 20,000 Hz, ±1 dB (T) 20 - 15,000 Hz, ±1 dB, (T) 20 - 20,000 Hz, +1 dB, -3 dB		
T.H.D	0.01% at 1 kHz, rated output		
Inputs	One Input Port: Port accepts any input module except T-01 One Direct Input (Use of direct input prohibits use of modular input port.)		
Input Sensitivity /Impedance	Input Port: 100 mV or 1000 mV (switchable)/10 kΩ Direct Input: 100 mV or 1000 mV (switchable)/10 kΩ		
Outputs	Main (T): 8 Ω, 25 and 70 volts, balanced Main (D): 4 Ω, unbalanced		
Output Regulation (1kHz)	(D) Less than 0.5 dB, no load to full load (T) Less than 1.0 dB, no load to full load		
S/N Ratio (Band Pass 20 - 20,000 Hz)	Input level switch in 0 dBV (1000 mV) position: 108 dB Input level switch in -20 dBV (100 mV) position: 90 dB		
Controls	1 Input gain control, 1 Input level switch, 1 Power ON/OFF switch, 1 Low-Cut switch		
Indicators	1 Power LED, 1 Protect LED, 1 Signal LED, 1 Normal LED, 1 Peak LED		
Protection	Self-protection, with AC fuse (inside)		Self-protection with 2 AC fuses (inside), plus 2 DC fuses
Connectors	Input: Card-edge connector and screw-terminal strip Output: Screw-terminal strip AC outlet: 3-pin grounding type AC power cord/plug: SJT, 3-prong type		
Temperature Range	-10°C - +60°C (12°F - 140°C)		
Finish	Black		
Dimensions (W×H×D)	16.54" (W) x 3.9" (H) x 14.09" (D) 420 (W) × 99.1 (H) × 358 (D) mm		16.54" (W) x 6" (H) x 13.16" (D) 420 (W) × 151.3 (H) × 334.2 (D) mm
Weight	20.06lbs (9.1kg)	24.03lbs (10.9kg)	43lbs (19.5kg)
Accessory	Volume control cover (YA-920) x 1		
Option	Rack mounting bracket (MB-25B)		Rack mounting bracket (MB-35B)

(T)=Transformer (D)=Direct

A-700 Series Mixer Power Amplifiers

A-706 (60W)
A-712 (120W)
A-724 (240W)

Equipped with 6 LINE/MIC selectable inputs, 2 LINE inputs and 1 MODULE input, the **A-700 Series PA Amplifier** is designed to suit PA system applications such as genreal announcements, BGM and houses of worship, large meeting rooms and factories.

MAIN FEATURES

- Nine channel integrated mixer/amplifiers for paging and background/foreground music distribution
- Proven TOA quality and reliability with wide frequency response, very low noise and distortion, and excellent output regulation
- Six Mic/Line inputs, balanced, with mic trim, 23 VDC phantom power and removable terminal block connector
- Two Auxiliary inputs, unbalanced, with dual-RCA jacks for convenient connection of stereo sources
- Module slot accepts 900 Series plug-in modules with additional features
- Transformer-isolation for telephone paging applications (Input #1) (optional on additional channels)
- 25 V, 70.7 V and 4 ohm speaker outputs with removable terminal block connector
- Auto-mute priority function assignable via external switches: Channels 1-3 and Module configurable as Mute Send; Channels 1-8 and Module configurable as Mute Receive
- Auto-mute sense control for adjusting mute activation threshold
- External mute terminals for activating mute function with external switch-closure
- Remote AC turn-on for activating power with an external switch-closure
- Turn-On delay disconnects output during power-up
- Over-current and thermal protection circuitry prevents potential damage from overloads, short-circuit and overheating
- Optional rack-mount kit, model MB-25B (2 RU)
- UL/cUL Listed
- 5 year warranty

	A-706	A-712	A-724
Power Source	120 V AC, 60 Hz		
Rated Output	60 W	120 W	240 W
Power/Current Consumption	155 W (rated output), 68 W (based on UL60065), under 250 mA (when power switch is OFF)	285 W (rated output), 110 W (based on UL60065), under 400 mA (when power switch is OFF)	565 W (rated output), 215 W (based on UL60065), under 60 mA (when power switch is OFF)
Frequency Response	50 - 20,000 Hz (±3 dB)		
Distortion	Under 2% at 1 kHz, rated power		
Input	INPUT 1 - 6: -70 to -50 dB*, 600 Ω (MIC)/ -10 dB*, 600 Ω (LINE) INPUT 1: Transformer-balanced, removable terminal block (3 pins) INPUT 2 - 6: Electronically-balanced, removable terminal block (3 pins) INPUT 7 - 8 (LINE): -20 dB*, 10 kΩ, unbalanced, RCA jack MODULE: -20 dB*, 10 kΩ PWR AMP IN: 0 dB*, 10 kΩ, unbalanced, RCA jack (An equalizer or other signal processor connectable between PRE AMP OUT and PWR AMP IN terminals)		
Output	REC OUT: 0 dB*, 600 Ω, unbalanced, RCA jack PRE AMP OUT: 0 dB*, 600 Ω, unbalanced, RCA jack SPEAKER OUT: 70 V line (83 Ω), 25 V line (10 Ω), and 4 - 16 Ω, removable terminal block (4 pins)		
Phantom Power (+23 V DC)	ON or OFF for each INPUT 1 - 6 (MIC input) with switch setting		
S/N Ratio (Band pass: 20 - 20,000 Hz)	Over 55 dB (INPUT 1 - 6, mic trim volume: max., 600 Ω terminated) Over 70 dB (INPUT 1 - 6, mic trim volume: min., 600 Ω terminated) Over 76 dB (Master volume: max.) Over 90 dB (All input volume: min.)		
Tone Control	Bass: ±10 dB at 100 Hz Treble: ±10 dB at 10 kHz		
Control Input	REMOTE VOLUME: Removable terminal block POWER REMOTE: No-voltage make contact input, open voltage: under 14 V DC, short-circuit: under 0.5 mA, removable terminal block MUTE CONTROL: No-voltage make contact input, open voltage: under 17 V DC, short-circuit: under 1.5 mA, removable terminal block		
Indicator	5-point LED output level meter, Power indicator LED		
Operating Temperature	-10°C to +40°C		
Finish	Panel: ABS resin, black, hair line Case: Steel plate, black		
Dimensions	16.53" (W) x 4.24" (H) x 13.84" (D) / 420 (W) × 107.7 (H) × 351.5 (D) mm		
Weight	21lbs (9.5kg)	26lbs (12kg)	30lbs (13.5kg)
Accessory	AC power cord (6.6ft/2m) x 1, Removable terminal plug (3 pins) x 6, Removable terminal plug (4 pins) x 1, Removable terminal plug (6 pins) x 1, Volume control cover x 4		
Option	Rack mounting bracket: MB-25B, Input transformer: IT-450, Volume control cover: YA-920		

* 0 dB = 1 V

BG 200 Series PA Amplifiers

BG-220 (20W)
BG-235 (35W)
Mixer Amplifier

The **BG-200 Series** is a 20/35 W three-input mixer amplifier for background music and general announcement. It is suited for use in bars, retail stores, and banquet rooms, and is equipped with the MOH OUT that permits 2-channel broadcast when used in conjunction with the optional booster amplifier **BA-235** (35 W) or **BA-260** (60 W).

MAIN FEATURES
- Ideal for background music and paging applications
- 2-channel broadcasts possible for system expansion as required through MOH/ZONE 2 output on BG Series Amplifiers
- Tamper-proof bass and treble controls preserve system settings
- Security knobs for volume control included
- Any of 3 inputs can be assigned to MOH/ZONE 2 output
- Line 2 and 3 outputs equipped with RCA pin jacks
- Line 2 and 3 inputs equipped with summing RCA jacks
- Automatic Mute sensing control to set mute activation threshold and manual mute function also provided
- Removable terminal blocks and rear-mounted DIP switches for fast and easy installation/setup
- Thermal protection circuits against overheating
- Meets UL/cUL regulations
- Optional rack and wall-mount kits: MB-25B-BK (2 RU) and MB-25B-J (two units, 2 RU)
- 5 year warranty

Power Source: 120V AC, 60Hz
Rated Output: BG-220: 20W/BG-235: 35W
Power/Current Consumption: BG-220: 60W (rated output), 36W (based on cULus standards)/BG-235: 90W (rated output), 55W (based on cULus standards)
Frequency Response: 50Hz – 20kHz
THD: 0.5% or less, at 1kHz, rated output
Input: Mic: -60dB*/Line: -10dB*
Mic/Line: 1 selectable, 600Ω, electronically balanced, removable terminal block or RCA jack
Line 2, 3: -10dB*, 10kΩ, unbalanced removable terminal block
Output: Speaker: 4Ω, 25V (31Ω) and 70V (245Ω), balanced, removable terminal block
MOH: 0dB*, 600Ω, balanced removable terminal block
Line: 0dB*, 600Ω, unbalanced removable terminal block
Output Regulation: 2dB or less, no load to full load (1kHz)
S/N ratio: Mic/Line 1: 60dB or more, Line 2, 3: 80dB or more (Band Pass: 20Hz – 20kHz, Tone Controls: Centered)
Muting: Manual mute/Automatic mute
Tone Control: Bass; ±10dB at 100Hz, Treble; ±10dB at 10kHz
Control: Mic/Line 1 gain control, Line 2 gain control, Line 3 gain control, Bass tone control, Treble tone control, MOH out gain control, Mute control (Manual mute), Mute sense control, Auto mute switch (Mic/Line 1)
Mic/Line 1 switch, Mute receive switch (Line 2, 3),
MOH assign switch (Mic/Line 1, Line 2, 3), Power ON/OFF switch
Indicator: Power LED, Signal LED, Peak LED
Operating Temperature: 32°F to +95°F
Operating Humidity: 35% to 80% RH (no condensation)
Finish: Panel; ABS resin, black/Case; Steel plate, black, paint
Dimensions: 8.3 (W) × 3.7 (H) × 10.4 (D)in
Weight: BG-220: 7.7lbs, BG-235: 8.8lbs
Accessory: Volume control cover: YA-920 × 3,
Removable terminal plug (2 pins) × 3,
Removable terminal plug (3 pins) × 1,
Removable terminal plug (4 pins) × 1,
Removable terminal plug (5 pins) × 1
Option: Rack mounting bracket: MB-25B-BK, MB-25B-J

* 0dB = 1V

BA 200 Series PA Amplifiers

BA-235 (35W)
BA-260 (60W)
Power Amplifier

The **BA-200** is a 35/60 W power amplifier for background music and general announcement. It is suited for use in bars, retail stores, and banquet rooms. When used in conjunction with the optional mixer amplifier **BG-220** (20 W) or **BG-235** (35 W), 2-channel broadcast can be made.

MAIN FEATURES
- Ideal for background music and paging applications
- 2-channel broadcast possible for system expansion as required through MOH/ZONE 2 output on BG Series Amplifiers
- Tamper-proof bass and treble controls preserve system settings
- Security knobs for volume control included
- Remote master volume control possible by usingg an external volume control
- RCA line input jacks
- Thermal protection circuits against overheating
- Meets UL/cUL regulations
- Optional rack kits: MB-25B-BK (2 RU) and MB-25B-J (two units, 2 RU)
- 5 year warranty

Power Source: 120V AC, 60Hz
Rated Output: BA-235: 35W/BA-260: 60W
Power/Current Consumption: BA-235: 90W (rated output), 52W (based on cULus standards)/BA-260: 130W (rated output), 66W (based on cULus standards)
Frequency Response: 50Hz – 20kHz
THD: 0.5% or less, at 1kHz, rated output
Input: Line In: 0dB*/+4dB* (selectable), 10kΩ, unbalanced, removable terminal block or RCA jack
Output: Speaker: 4Ω, 25V (31Ω) and 70V (245Ω), balanced, removable terminal block
Bridge: parallel in Line in, removable terminal block
Output Regulation: 2dB or less, no load to full load (1kHz)
S/N ratio: 80dB or more
(Band Pass: 20Hz – 20kHz, Tone Controls: Centered)
Tone Control: Bass; ±10dB at 100Hz, Treble; ±10dB at 10kHz
Control Input: Master gain control, Bass tone control, Treble tone control, Input Level selector switch, Remote Volume control, Power ON/OFF switch
Indicator: Power LED, Signal LED, Peak LED
Operating Temperature: 32°F to +95°F
Operating Humidity: 35% to 80% RH (no condensation)
Finish: Panel; ABS resin, black/Case; Steel plate, black, paint
Dimensions: 8.3 (W) × 3.7 (H) × 10.4 (D)in
Weight: BA-235: 8.8lbs, BG-260: 10.1lbs
Accessory: Volume control cover: YA-920 × 3,
Removable terminal plug (2 pins) × 3,
Removable terminal plug (4 pins) × 1,
Option: Rack mounting bracket: MB-25B-BK, MB-25B-J

* 0dB = 1V

BG-2000 Series Mixer Power Amplifiers

BG-2035 (35W)
BG-2060 (60W)
BG-2120 (120W)

TOA's **BG-2000 Series Mixer/Amplifiers** is a 5-input mixer amplifier for background music and general announcement. It is suited for use in bars, retail stores, and banquet rooms. It is equipped with the MOH OUT that permits 2-channel broadcast when used in conjunction with the optional booster amplifier **BA-235** (35 W) or **BA-260** (60 W). TOA's BG-2000 Series Mixer Amplifier models include **BG-2035**: 35W; **BG-2060**: 60W and **BG-2120**: 120W.

MAIN FEATURES

- Compact five channel Mixer-Amplifier for paging, background/foreground music distribution and music/messaging-on-hold.
- All inputs/outputs with removable terminal blocks allow quick and easy installation.
- Any of five inputs assignable to MOH/ZONE 2 output.
- RCA pin jacks for Lines 2 and 3.
- Line 2 and 3 inputs equipped with summing RCA jacks.
- Phantom Power (+ 24V DC) incorporated for MIC input.
- Module slot accepts optional 900 Series plug-in modules for custom system configurations.
- Rear panel-mounted DIP switches allow easy configuring of settings.
- Provides auto/manual mute function with adjustable muting sensitivity.
- Incorporates Remote volume control connection.
- 2-channel broadcast capability together with zone 2 expansion capability in conjunction with BA-200 Series.
- Tamper-proof, front-panel bass and treble controls are recessed to protect their settings.
- Thermal protection circuitry prevents potential damage from excessive heat build-up.
- AC Mains Circuit Breaker.
- Supplied accessory security knobs for volume controls prevent unauthorized volume setting changes.
- Optional rack-mount kit (MB-1000).
- UL/cUL Listed.
- Five Year Warranty.

	BG-2035	BG-2060	BG-2120
Power Source	120 V AC, 60 Hz		
Rated Output	35 W	60 W	120 W
Power Consumption	94 W (rated output), 50 W (based on UL/CSA standards)	163 W (rated output), 80 W (based on UL/CSA standards)	265 W (rated output), 120 W (based on UL/CSA standards)
Frequency Response	50 - 20,000 Hz		
Total Harmonic Distortion	0.05%, at 1 kHz, rated output		
Input	Mic: -60 dB*, 600 Ω, electronically balanced, removable terminal block Line 1: -10 dB*/ TEL: -20 dB* Line 1/TEL selectable, 10 kΩ, electronically balanced, removable terminal block Line 2, 3: -10 dB*, 10 kΩ, unbalanced, removable terminal block and RCA jacks Module		
Output	Speaker: 4 Ω, 25 V (18 Ω), 70 V (140 Ω), balanced, removable terminal block; MOH: 0 dB*, 600 Ω, balanced, removable terminal block; Line: 0 dB*, 600 Ω, unbalanced, removable terminal block	Speaker: 4 Ω, 25 V (10 Ω), 70 V (83 Ω), balanced, removable terminal block MOH: 0 dB*, 600 Ω, balanced, removable terminal block; Line: 0 dB*, 600 Ω, unbalanced, removable terminal block	Speaker: 4 Ω, 25 V (5.2 Ω), 70 V (42 Ω), balanced, removable terminal block MOH: 0 dB*, 600 Ω, balanced, removable terminal block; Line: 0 dB*, 600 Ω, unbalanced, removable terminal block
Output Regulation	2 dB or less, no load to full load (1 kHz)		
S/N Ratio	Mic: 60 dB or more, Line 1/TEL, Line 2, 3, Module: 75 dB or more (Band Pass: 20 Hz - 20 kHz, Tone Controls: Centered)		
Muting	Manual mute/Automatic mute		
Tone Controls	Bass: ±10 dB at 100 Hz, Treble: ±10 dB at 10 kHz		
Control	Mic gain control, Line 1/TEL gain control, Line 2 gain control, Line 3 gain control, Module gain control, Bass tone control, Treble tone control, MOH out gain control, Mute control (Manual mute), Remote volume control, Mute sense control, Line 1/TEL selector switch, Phantom power switch (Mic), Auto mute switch (Mic, Line 1/TEL, Module), Mute receive switch (Mic, Line 1/TEL, Line 2, 3, Module), MOH assign switch (Mic, Line 1/TEL, Line 2, 3, Module), Power ON/OFF switch		
Indicator	Power LED, Signal LED, Peak LED		
Protection	--		
Other Feature	Automatic electronic drive limiter		
Operating Temperature	0° C to +40° C (32° F to 104° F)		
Operating Humidity	35% to 80% RH (no condensation)		
Finish	Panel: ABS resin, black Case: Steel plate, black, paint		
Dimensions	10.39" (W) x 3.71" (H) x 10.52" (D) / 264 (W) × 94.3 (H) × 267.3 (D) mm		
Weight	11.68lbs (5.3kg)		13.23lbs (6kg)
Accessory	Volume control cover: YA-920 x 5, Removable terminal plug (2 pins) x 4, Removable terminal plug (3 pins) x 2, Removable terminal plug (4 pins) x 1, Removable terminal plug (5 pins) x 1		
Option	Rack mounting bracket: MB-1000		

*1 0 dB = 1 V
*2 Distance between barriers on the above screw terminal: 6 mm

900 Series Modules - Microphone Input Modules

M-01 Series *(M-01F/M/P/S)*
Microphone Input Modules
- For balanced, low impedance microphone
- High and low cut filters for tone control
- Phantom power for condenser-type microphones
- Connectors: female XLR *(M-01F)*, male XLR *(M-01M)*, 1/4" phone jack *(M-01P)*, removable terminal block *(M-01S)*

M-21S
Microphone Preamplifier with Remote Volume Control
- For balanced, low impedance microphone
- High and low cut filters for tone control
- Phantom power for condenser-type microphones
- Allows remote control of input signal using an external 10k ohm linear-taper potentiometer
- Connector: screw terminal

M-51 Series *(M-51F/S)*
Microphone Input with Voice Gate
- For balanced, low impedance microphones
- Low cut filter for tone control
- Phantom power for condenser-type microphones
- Gate function keeps module muted until input signal exceeds threshold
- Connectors: female XLR *(M-51F)*, removable terminal block *(M-51S)*

M-03P
High Impedance Microphone Input
- For unbalanced, high impedance mics
- High and low cut filters for tone control
- Connector: 1/4" phone jack

M-11S
Microphone Input with Mute-Receive
- For balanced, low impedance microphone
- High and low cut filters for tone control
- Phantom power for condenser-type microphones
- Responds to mute bus activation via mute send module or switch-closure
- Two mute response modes: Normally-on (OFF during mute activation) or Normally-off (ON during mute activation)
- Connector: removable terminal block

M-41S
Microphone Paging Input with Mute-Send
- For balanced, low impedance microphones
- For voice-activated over-ride of mute-receive modules
- High and low cut filters for tone control
- Phantom power for condenser-type microphones
- Signal at input terminals activates mute bus
- Connector: removable terminal block

M-61 Series *(M-61F/S)*
Microphone Input with Compressor
- For balanced, low impedance microphones
- High and low cut filters for tone control
- Phantom power for condenser-type microphones
- Compressor function prevents overload and distortion
- Connectors: female XLR *(M-61F)* or removable terminal block *(M-61S T)*

ML-11
Mic/Line Input w/Mute/Send Receive
- Switchable mic/lin input
- Adjustable Mute-Send threshold (VOX sensitivity)
- High and Low Cut Filters
- Combination Mute Send and Receive function
- Assign mute send or receive to each mute bus

900 Series Modules - Line Input Modules

B-01 Series *(B-01F/S)*
Balanced Line Input
- For balanced or unbalanced line level sources such as mixer outputs, signal processors and wireless microphone receivers
- Transformer isolation (10kΩ)
- Connector: female XLR *(B-01F)*, removable terminal block *(B-01S)*

B-21S
Balanced Line Input with Remote Volume Control
- For balanced or unbalanced, line level equipment such as tuners, tape decks and CD players
- Transformer isolation (10kΩ)
- Allows remote control of input signal using an external 10k ohm linear-taper potentiometer
- Connector: screw terminal

L-01 Series *(L-01F/S)*
Line Matching Input
- For applications requiring 600Ω line-matching
- Transformer isolation (600Ω)
- Connector: female XLR *(L-01F)*; removable terminal block *(L-01S)*

L-41S
Line Matching Input with Mute-Send
- For applications requiring 600 Ω line-matching
- Responds to mute bus activation
- Transformer isolation (600Ω)
- Signal at input terminals activates mute bus
- Connector: removable terminal block

B-11S
Balanced Line Input with Mute-Receive
- For balanced or unbalanced line level sources such as mixer outputs, signal processors and wireless microphone receivers
- Transformer isolation (10kΩ)
- Responds to mute bus activation via mute send module or switch-closure
- Connector: removable terminal block

B-41S
Balanced Line with Input with Mute-Send
- For balanced or unbalanced, line level equipment
- For signal-active over-ride of mute-receive modules
- Transformer isolation (10kΩ)
- Signal at input terminals activates mute bus
- Connector: removable terminal block
- Recommended for phone paging applications

L-11S
Line Matching Input with Mute-Receive
- For applications requiring 600Ω line-matching
- Responds to mute bus activation
- Transformer isolation (600Ω)
- Responds to mute bus activation via mute send module or switch-closure
- Connector: removable terminal block

U-01 Series *(U-01F/P/R/S)*
Unbalanced Line Input
- For unbalanced, line level sources such as tuners, cassette decks, CD players, computer sound cards, jukeboxes, mixers and satellite receivers
- Use for adjacent sources (less than 15ft from the host unit)
- Connectors: female XLR (U-01F), 1/4" phone jack *(U-01P)*, RCA jack *(U-01R)*, removable terminal block *(U-01S)*

U-03 Series *(U-03R/S)*
Unbalanced Line Input with High/Low Cut Filters
- For unbalanced, line level sources such as tuners, cassette decks, CD players, computer sound cards, jukeboxes, mixers and satellite receivers
- Use for adjacent sources (less than 15ft from the host unit)
- High and low cut filters for tone control
- Connectors: dual RCA jack w/ passive summing *(U-03R)*, removable terminal block *(U-03S)*

U-12S
Unbalanced Line Input with Variable Mute-Receive Depth
- For unbalanced, line level sources such as tuners, cassette decks, CD players, computer sound cards, jukeboxes, mixers and satellite receivers
- Use for adjacent sources (less than 15ft from the host unit)
- Responds to mute bus activation via mute send module or switch-closure
- Adjustable depth provides “ducking” rather than full muting
- Connector: removable terminal block

U-14R
Dual Input Priority Module w/AGC
- Dual input module for applications with business music plus an on-premises CD jukebox or other source
- Two line inputs – Jukebox and BGM
- Auto-mute function with adjustable mute threshold (jukebox overrides BGM)
- Automatic Gain Control (AGC) on jukebox input for consistent signal levels
- Individual input level controls
- Stereo-summing dual RCA jacks

U-43 Series *(U-43R/S)*
Unbalanced Line Input with High/Low Filters and Mute-Send
- For unbalanced, line level sources such as tuners, cassette decks, CD players, computer sound cards, jukeboxes, mixers and satellite receivers
- Use for adjacent sources (less than 15ft from the host unit)
- High and low cut filters for tone control
- Signal at input terminals activates mute bus
- Connectors: dual RCA jack w/ passive summing *(U-43R)*, removable terminal block *(U-43S)*

U-11 Series *(U-11R/S)*
Unbalanced Line Input with Mute-Receive
- For unbalanced, line level sources such as tuners, cassette decks, CD players, computer sound cards, jukeboxes, mixers and satellite receivers
- Use for adjacent sources (less than 15ft from the host unit)
- Responds to mute bus activation via mute send module or switch-closure
- Connectors: RCA jack *(U-11R)*, removable terminal block *(U-11S)*

U-13 Series *(U-13R/S)*
Unbalanced Line Input with High/Low Cut Filters and Mute-Receive
- For unbalanced, line level sources such as tuners, cassette decks, CD players, computer sound cards, jukeboxes, mixers and satellite receivers
- Use for adjacent sources (less than 15ft from the host unit)
- High and low cut filters for tone control
- Responds to mute bus activation via mute send module or switch-closure
- Connectors: dual RCA jack w/passive summing *(U-13R)*, removable terminal block *(U-13S)*

U-21S
Unbalanced Line Input with Remote Volume Control
- For unbalanced, line level sources such as tuners, cassette decks, CD players, computer sound cards, jukeboxes, mixers and satellite receivers
- Use for adjacent sources (less than 15ft from the host unit)
- Allows remote control of input signal using an external 10kΩ linear-taper potentiometer
- Master Remote Volume mode
- Connector: screw terminal

U-61S
Unbalanced Line Input with Compressor
- For unbalanced, line level sources such as tuners, cassette decks, CD players, computer sound cards, jukeboxes, mixers and satellite receivers
- For adjacent sources (less than 15ft from the host unit)
- Compressor function prevents overload and distortion
- Master compressor mode
- Connector: removable terminal block

900 Series Modules - Special Function Modules

T-01S
Balanced Line Output
- Transformer-Isolated line output of the mixing bus signal to feed other remote mixers, amplifiers, and tape recorders
- Output level control
- Connector: removable terminal block

T-12S
Unbalanced Line Input with Music-On-Hold Output and Input Mute-Receive
- Unbalanced line input for AM/FM tuners, cassette decks, CD players, computer sound cards, jukeboxes, mixers and satellite receivers
- Balanced transformer-isolated uninterrupted output of module’s input signal
- Output level control for adjusting the MOH output signal level
- Responds to mute bus activation via mute send module or switch-closure
- Connector: screw terminal

T-02S
Unbalanced Line Input with Music-On-Hold Output
- Unbalanced line input for AM/FM tuners, cassette decks, CD players, computer sound cards, jukeboxes, mixers and satellite receivers
- Balanced transformer-isolated uninterrupted output of module’s input signal
- Output level control for adjusting the MOH output signal level
- Connector: screw terminal

E-04R (H-1), E-05R (H-2/H-2WP), E-07S (FB-100 and HB-1)
Equalization for TOA Speakers
- Optimized preset equalization curve for TOA speakers
- Connects between pre-amp output and power amp input (except E-07S)
- Dual RCA cable included
- Connector: dual RCA (in/out); removable terminal block (E-07S)

* The E-07S is a low-pass-filter output module with a mix bus output to drive a dedicated external subwoofer amplifier

S-01S
1 kHz Sine Wave Test Tone
- Generates 1 kHz sine wave tone via switch-closure. Ideal as a test tone for the audio system
- Connector: removable terminal block

S-02S
Buzzer/Yelp Tone Generator
- Generates buzzer or yelp tones via switch-closure
- Connector: removable terminal block

S-04S
Switch-Selectable Tone Generator
- Generates one of eight tones via switch-closure
- Single or continuous tone activation
- Connector: removable terminal block

S-20S
Digital Message/Tone Module w/USB
- Digital audio storage module for messaging and tone-signaling applications
- USB interface for fast audio file transfer between PC and module
- Three minutes of CD quality digital storage - 50 to 20k Hz frequency response
- Versatile CD-ROM tone library included
- Accepts four audio files - 44.1 kHz, 16 bit PCM WAV format
- External activation for single or continuous playback
- Automatic priority overrides current message
- Stop function immediately cancels playback
- Selectable repeat interval for each message
- Auto-mute function priority over mute-receive modules
- Adjustable level control
- CD-ROM tone library, software and USB cable included

V-01S
Remote Master Volume Control (VCA) Module
- Voltage Controlled Amplifier (VCA) for applications requiring preset remote master volume control
- Line input and output connect to host amplifier's pre-amp output and power amp input
- 24 VDC output and control input interfaces directly to RDL RLC3 remote level control
- RCA and phoenix-style connectors
- For 10k potentiometer volume control, use U-21S

E-03R (F-122CU)
Equalization for TOA Speakers
- Optimized preset equalization for F-122CU speakers
- Connects between pre-amp output and power amp input
- Low pass output filter for powered subwoofer
- Subwoofer output is balanced or unbalanced
- Subwoofer phase can be changed

E-06R (H-3/H-3WP)
Equalization for TOA Speakers
- Optimized preset equalization for H-3/H-3WP speakers
- Connects between pre-amp output and power amp input

WE-2
Two Input Expander Kit
- Two input expander kit (W-906A, W-912A) (Requires 900 series modules)

900 SERIES PLUG-IN MODULE CONNECTOIN CHART*

Connection			CANNON XLR-3-13 (Female) type (F)	CANNON XLR-3-14 (Male) type (M)	Phone Jack (F)	RCA (1P) Phono Jack* mono (F)	RCA (2P) Phono Jack* stereo (F)	2P Terminal Block (S)	4P Screw Terminal (S)
Plug-Connection	Balanced Connection	M-81 Series: B-21, M-11: B-81, M-21: L-01 Series, M-41: L-11, M-51 Series: L-41, M-61 Series: T-81, B-01 Series: T-12, B-11 Series: ML-11T	CANNON XLR-3-12 (Male) type	CANNON XLR-3-11 (Female) type	Phone Plug (Double Pole)	—	—		
	Unbalanced Connection	M-02, U-01 Series, U-00, U-11 Series, U-10, U-12, U-40	CANNON XLR-3-12 (Male) type	CANNON XLR-3-11 (Female) type	Phone Plug (Single Pole)				
	Input Output Connection	U-21, U-61	—	—	—	—	—	—	
	Input Output Connection	T-02	—	—	—	—	—	—	

A-2000 Series Mixer Power Amplifiers

A-2240 (240W)
Mixer/Power Amplifier

The **A-2240** (240W) **Mixer Power Amplifier** is suitable for commercial audio systems in schools, offices, restaurants, shops, factories, houses of worship, and large meeting rooms. It is engineered for high performance with wide frequency response, low noise and distortion, and excellent output regulation, and is wquipped with balanced mic. inputs for better isolation from external noise, compared to unbalanced inputs. This amplifier offers a comfortable acoustic space thanks to tone control at bass and treble and phantom power can be provided to MIC1, for supplying power to a condenser microphone. It is also equipped with Auto-mute function which allows voiceactivated paging by Microphone and Telephone paging inputs which override the Auxiliary inputs. The unit has a scratch- and fingerprint-resistant finish and an easy and quick volume control with master volume knob. The A-2240 is UL/cUL Listed.

MAIN FEATURES
- 240W output @ 25V/70V/4Ω
- Fan Cooled
- Two Balanced Mic Inputs (one w/23VDC switchable phantom power).
- Transformer-Isolated Telephone Paging Input (Telephone Input)
- Two Unbalanced Auxiliary Inputs, stereo summing with dual-RCA jacks for convenient connection of stereo sources.
- Recording Output for connecting an external amplifier or recording device
- 25 V, 70.7 V and 4 Ohm Speaker Outputs with screw-type barrier terminal strip.
- Auto-Mute Sensitivity Control for adjusting mute threshold.
- Auto-Mute Priority Function
- Inputs: Mic 1, Mic 2 and Telephone take priority.
- Inputs Aux 1 and Aux 2 function as background inputs that mute -30dB during paging operation.

Power Source: 120V AC, 50Hz
Rated Output: 240W
Power Consumption: 238W (EN60065), 520W (AC operation at rated output)
Frequency Response: 50 – 20,000Hz (±3dB)
Distortion: Under 1% at 1kHz, 1/3 rated power
Input: MIC 1, 2: -60dB* (10mV), 600Ω, electronically balanced, screw terminal
TEL: -10dB* (300mV), 10kΩ, transformer isolated balanced, screw terminal
AUX 1, 2: -20dB* (100mV), 10kΩ, unbalanced, RCA pin jack
Output: Speaker out: Balanced (floating)
High impedance: 21Ω (70V), 2.6Ω (25V)
Low impedance: 4Ω (31V)
Rec. out: 0dB* (1.0V), 600Ω, unbalanced, RCA pin jack
Phantom Power: DC +21V (MIC1, with ON/OFF switch)
S/N ratio: Over 60dB
Muting: MIC 1, MIC 2 and TEL overrides other input signals with -30dB attenuation.
Sensitivity input level adjustable for MIC 1, MIC 2: 0 to -64dB, TEL: 0 to -23dB
(MIC 1, MIC 2, TEL, same priority level)
Tone Control: Bass: ±10dB at 100Hz
Treble: ±10dB at 10kHz
Ventilation: Fan cooling
Indicators: Power, signal, peak
Finish: Panel: ABS resin, black
Case: Steel plate, black
Dimensions: 16.5 (W) × 4.0 (H) × 14.2 (D) in
Weight: 29.10 lb

* 0dB = 1V

CA Series Mobile Mixer Amplifiers

CA-115 (15W)
CA-130 (30W)
CA-160 (60W)

TOA's **CA Series MOBILE MIXER/AMPLIFIERS** are ideal for remote applications requiring a compact and powerful mixer/amplifier for public address or emergency paging. Three **CA Series** models, the **CA-115** (15 W), **CA-130** (30 W) and **CA-160** (60 W) are each powered with a standard 12 Volt DC battery and operate into four or eight ohm speaker loads. All models include two microphone inputs with individual volume controls, a handheld microphone with talk switch, and an auxiliary input for connecting an external CD player, radio, tape deck or tone generator. All mounting hardware is included for easy installation under dashboard or into a standard console cutout.

MAIN FEATURES
- Mobile mixer/amplifiers for remote applications
- 12 VDC powered
- Two microphone inputs with volume controls
- Supports 4 or 8 ohm speaker loads
- Handheld microphone included - unidirectional, dynamic-type with talk switch, 6' cord and mounting hardware
- Auxiliary input for connecting an external CD player, radio, tape deck or tone generator
- Mounting hardware included - mounts under dashboard or into standard DIN-size console cutout
- Applications: Automobiles; Boats; Buses; Construction Vehicles; Emergency Vehicles; Law Enforcement Vehicles; Parade Floats; Theme Park Rides
- 5 year warranty

	CA-115	CA-130	CA-160
Power Source	Standard voltage: 14 V DC; Usable voltage: 10 - 16 V DC (12 V battery used)		
Power Consumption	3 A or less at rated output	5 A or less at rated output	9 A or less at rated output
Rated Output	15 W	30 W	60 W
Output Impedance	4 Ω (BRN), 8 Ω (ORG), Common (WHT) Changeable by changing lead wire connections		
Distortion	Less than 5% (at 1 kHz rated output)		
Frequency Response	100 Hz - 10 kHz		
Input	Mic 1, 2: 600 Ω, 4 mV, phone jack; Aux: 10 kΩ, 500 mV, phone jack		
Finish	Front panel: ABS resin, black; Case: Zinc plated steel sheet		
Dimensions	7" (W) x 2" (H) x 5.2" (D) 178 (W) × 50 (H) × 132 (D) mm (mounting device excluded)	7" (W) x 2" (H) x 5.7" (D) 178 (W) × 50 (H) × 144 (D) mm (mounting device excluded)	7" (W) x 2" (H) x 6.7" (D) 178 (W) × 50 (H) × 170 (D) mm (mounting device excluded)
Weight	2lbs (900g)	2.4lbs (1.1kg)	2.6lbs (1.2kg)
Accessory	Microphone holder x 1, Mounting bracket x 1, Mounting screw x 1 set, Fuse (4 A) x 1, Connection cord x 1 set		
Accessory Microphone	Unidirectional dynamic type with talk switch Impedance: 600 Ω Sensitivity : -53 dB (1 kHz, 0 dB = 1 V/Pa)		

Paging Accessories

Q-RM9012PS
Remote Microphone

MAIN FEATURES
- High-sensitivity electret-condenser gooseneck mic for clear voice
- 12 zone select buttons, All Call, Clear
- 12 Contact Outs corresponding to buttons (RJ-45 connector for use with shielded Cat5 wiring)
- Connects to C-IN on 9000M2 (mainframe & equipped with C-001T)
- Supplied with AD-246 AC Adapter

Power Source: 24 V DC from AC adaptor AD-246 or equivalent
Power Consumption: 80mA or less
Audio Output: 0 dB (*1), 600 Ohms, transformer balanced, RJ45 connector
Distortion: 1% or less
Frequency Response: 100 - 20,000Hz
S/N Ratio Microphone: 60dB or more Unidirectional electret condenser microphone
Operating Temperature: 14°F to +104°F

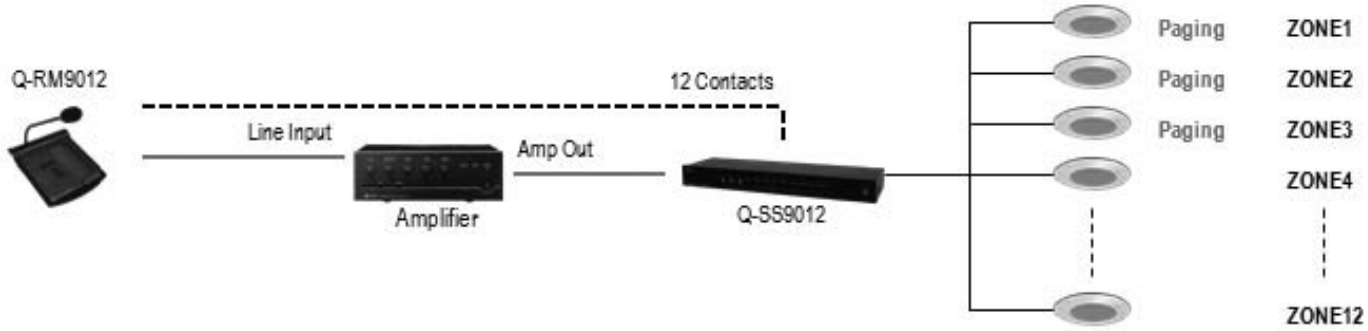
Control Output: 12 channels, open collector output, withstand voltage: 27V DC, control current: max. 50 mA, (2) RJ45 connectors
Number of Keys: 12 zone selection keys, All call key, Cancel key, Talk key
Volume Control: Microphone volume control
Finish: ABS resin, Black
Dimensions: 7.5 (W) x 3 (H) X 8.5 (D) in (Gooseneck microphone excluded)
Weight: 1.7lbs
Accessory: AC Adaptor: AD-246

Q-SS9012PS
Speaker Selector

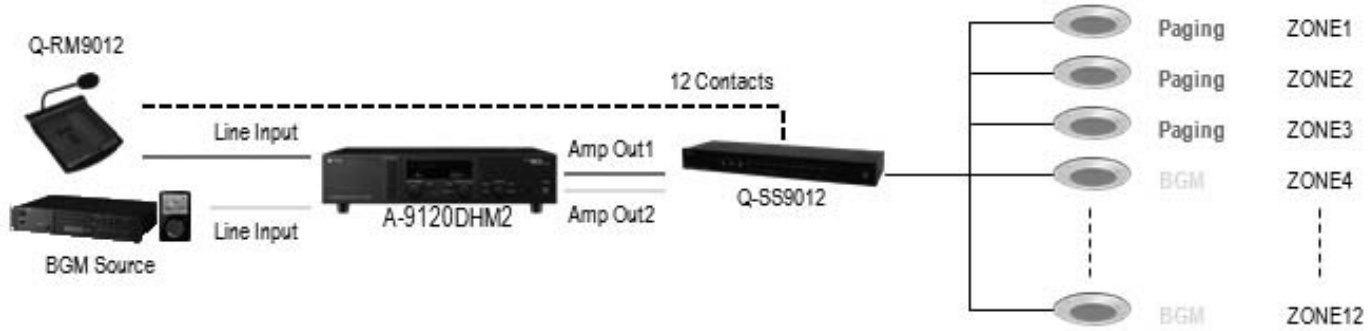
MAIN FEATURES
- 12 contact inputs and 12 speaker outputs. Power amp input is split into 12 zones with activation via contact closure
- Possible to expand number of 9000M2 paging zones along with conventional output zones (T-001T) up to 19 zones
- Can facilitate paging over BGM by switching between BGM output (amp input 2) and Page output (amp input 1)
- May work with internal or external amplifier
- 19" rack-mountable (using optional MB-15B)
- Supplied with AD-246 AC Adapter

Power Source: 24 V DC from AC adaptor AD-246 or equivalent
Power Consumption: 400mA or less
Power Handling: 250W or less (70V/100V line) per channel (IN1, IN2)
Control Input: 12 channels, dry (no voltage) contact closures, open voltage: 3.3V DC, short-circut current: under 1 mA, removable terminal block (24 pins)
Speaker Terminal: Removable Terminal Block (2 pins, IN1, IN2, Zone1 - 12)
Control Terminal: Removable Terminal Block (24 pins
Operation Temperature: 14°F to +104°F
Finish: Case: Surface-treated steel plate, Black
Dimensions: 16.5 (W) x 1.7 (H) x 4.8 (D) in
Weight: 3.5lbs
Accessory: Removable Terminal plug (2pins)
Removable Terminal Plug (12 pins)
Removable Terminal Plug (14 pins)
Supplied Accessory: AC adaptor: AD-246
Option: Rack mount bracket: MB-15B, Wall mount bracket: YC-850

12 ZONE PAGING SYSTEM with single channel amplifier



12 ZONE PAGING + BGM SYSTEM with dual channel amplifier



Digital Power Amplifiers

DA Series - Multi-Channel Amplifiers

TOA's **DA Series** multi-channel power amplifiers offer a wider choice of power ratings, advanced digital Class D amplifications circuitry, and a highly efficient AC mains to output power ratio, for the complete technological superiority it takes to support long-term installation applications. These energy-efficient, space-saving amplifiers are designed to combine high levels of performance and efficiency, and are well-suited to ensure sound reinforcement reliability in a wide range of venue types. The high-impedance models are ideal for multi-zone applications such as presentation and press-conference rooms, restaurants and similar-sized locations. The low-impedance units are well-suited to such locations as exhibition halls, sports facilities, multipurpose halls and houses of worship.

MAIN FEATURES

DA-250D, DA-250DH, DA-250F, DA-250FH, DA-500F-HL, DA-550F
MULTI-CHANNEL DIGITAL POWER AMPLIFIERS

- Class D design – 85% efficient!
- 30% lower power consumption than conventional amplifiers
- Compact, single or dual rack-space design
- Stack up to 5 units without open spaces between units
- Independent power supply for each channel
- Low heat dissipation
- Optional isolation transformer, model MT-251H (DA-250DH/FH and DA-500F-HL only)
- 5 year warranty

The **DA-250D** is a 2-Channel Digital Power Amplifier featuring lightweight, compact, high power output, and high efficiency. It delivers 250 W × 2 channels (4 Ω output) using a switching power supply. Each channel is equipped with an independent power section. It can be mounted in an EIA Standard equipment rack (1 unit size).

The **DA-250DH** is a 2-Channel Digital Power Amplifier designed for 70 V line high-impedance distribution and features lightweight, compact, high power output, and high efficiency. It delivers 250 W × 2 channels (19.6 Ω output) using a switching power supply. Each channel is equipped with an independent power section. It can be electrically isolated from the high-impedance speaker system by attaching the MT-251H Output Transformer (optional). It can be mounted in an EIA Standard equipment rack (1 unit size).

The **DA-250F** is a 4-Channel Digital Power Amplifier featuring lightweight, compact, high power output, and high efficiency. It delivers 250 W × 4 channels (4 Ω output) using a switching power supply. Each channel is equipped with an independent power section. It can be mounted in an EIA Standard equipment rack (1 unit size).

The **DA-250FH** is a 4-Channel Digital Power Amplifier designed for 70 V line high-impedance distribution and features lightweight, compact, high power output, and high efficiency. It delivers 250 W × 4 channels (19.6 Ω output) using a switching power supply. Each channel is equipped with an independent power section. It can be electrically isolated from the high-impedance speaker system by attaching the MT-251H Output Transformer (optional). It can be mounted in an EIA Standard equipment rack (1 unit size).

The **DA-500F-HL** is a 4-Channel Digital Power Amplifier featuring lightweight, compact, high power output, and high efficiency. It delivers 500 W × 4 channels (70 V or 550 W into 8 Ω or 100 W into 4 Ω) using a switching power supply. Each channel is equipped with an independent power section. Its Control/Monitor terminals permit power ON/OFF control of the individual channels and status monitoring for the power ON/OFF on each channel, protection on each channel, and fan operation. Prepare the control panel or status monitor display panel separately. It can be mounted in an EIA Standard equipment rack (2 unit size).

The **DA-550F** is a 4-Channel Digital Power Amplifier featuring lightweight, compact, high power output, and high efficiency. It delivers 550 W × 4 channels (4 Ω output) using a switching power supply. Each channel is equipped with an independent power section. Its Control/Monitor terminals permit power ON/OFF control of the individual channels and status monitoring for the power ON/OFF on each channel, protection on each channel, and fan operation. Prepare the control panel or status monitor display panel separately. It can be mounted in an EIA Standard equipment rack (2 unit size).

	DA-250F	DA-250FH	DA-250D	DA-250DH	DA-500F-HL	DA-550F
Power Source	120 V AC, 50/60 Hz					
Amplification System	Class D					
Power Consumption	200 W (based on UL/CSA standards) 1300 W (rated output 4 Ω × 4); 850 W (rated output 8 Ω × 4)	200 W (based on UL/CSA standards) 1200 W (rated output 70 V line, 19.6 Ω × 4)	120 W (based on UL/CSA standards) 650 W (rated output 4 Ω × 2); 420 W (rated output 8 Ω × 2)	120 W (based on UL/CSA standards) 580 W (rated output 70 V line, 19.6 Ω × 2)	480 W (based on UL/CSA standards), 2600 W (rated output 8 Ω × 4)	480 W (based on UL/CSA standards), 2800 W (rated output 4 Ω), 1650 W (rated output 8 Ω)
Input	4 circuits, -10dB* or +4 dB* (factory set +4dB*) (1.23 V) (input level control in max. position), 10 kΩ, electronically-balanced, removable terminal block (3 pins), CH 1 mode ON/OFF switch (ON: CH 1 to All ch, OFF: Each ch)		2 circuits, -10dB* or +4 dB* (factory set +4dB*) (1.23 V) (input level control in max. position), 10 kΩ, electronically-balanced, removable terminal block (3 pins), XLR-3-31 type connector, CH 1 mode ON/OFF switch (ON: PARALLEL, OFF: STEREO)		4 circuits, -10dB* or +4 dB* (factory set +4dB*) (1.23 V) (input level control in max. position), 10 kΩ, electronically-balanced, removable terminal block (3 pins), XLR-3-31 type connector, CH 1 mode ON/OFF switch (ON: CH 1 to All CH, OFF: Each CH), HPF ON/OFF switch (-6 dB/oct, cut off frequency 50 Hz)	4 circuits, -10dB* or +4 dB* (factory set +4dB*) (1.23 V) (input level control in max. position), 10 kΩ, electronically-balanced, removable terminal block (3 pins), XLR-3-31 type connector CH 1 mode ON/OFF switch (ON: CH 1 to All CH, OFF: Each CH)
Rated Output	4 channels: 250 W × 4 (4 Ω), 170 W × 4 (8 Ω) 2 channels (BRIDGE): 500 W × 2 (8 Ω) M4 screw terminal, distance between barriers: 0.35” (8.8mm)	2 channels: 250 W × 4 (70 V line, 19.6 Ω) 1 channel (BRIDGE): 500 W × 2 (140 V line, 39.2 Ω); M4 screw terminal, distance between barriers: 0.35” (8.8mm)	2 channels: 250 W × 2 (4 Ω), 170 W × 2 (8 Ω) 1 channel (BRIDGE): 500 W × 1 (8 Ω) M4 screw terminal, distance between barriers: 0.35” (8.8mm)	2 channels: 250 W × 2 (70 V line, 19.6 Ω) 1 channel (BRIDGE): 500 W × 1 (140 V line, 39.2 Ω); M4 screw terminal, distance between barriers: 0.35” (8.8mm)	4 channels: 500 W × 4 (9.8 Ω, 70 V line), 550 W × 4 (8 Ω), 100 W × 4 (4 Ω); 2 channels (BRIDGE): 1000 W × 2 (19.6 Ω, 140 V line), 1100 W × 2 (16 Ω), M4 screw terminal, distance between barriers: 0.35” (8.8mm)	4 channels: 550 W × 4 (4 Ω), 350 W × 4 (8 Ω) 2 channels (BRIDGE): 1100 W × 2 (8 Ω) M4 screw terminal, distance between barriers: 0.35” (8.8mm)
Frequency Response	20 - 20,000 Hz (±1 dB)	20 - 20,000 Hz (±1 dB): HPF OFF/50 - 20,000 Hz (-3 dB, +1 dB): HPF ON (selectable with the inner jumper)	20 - 20,000 Hz (±1 dB)	20 - 20,000 Hz (±1 dB): HPF OFF/50 - 20,000 Hz (-3 dB, +1 dB): HPF ON (selectable with the inner jumper)	20 - 20,000 Hz (-2 dB, +1 dB): HPF OFF, 50-20,000 Hz (-3 dB, +1 dB): HPF ON	20 - 20,000 Hz (-2 dB, +1 dB)
Total Harmonic Distortion	0.1% (1 kHz) 0.3% (20 - 20,000 Hz)	0.1% (1 kHz), 0.3% (20 - 20,000Hz): HPF OFF; 0.1% (1 kHz), 0.3% (100 - 20,000 Hz): HPF ON	0.1% (1 kHz) 0.3% (20-20,000 Hz)	0.1% (1 kHz), 0.3% (20-20,000Hz): HPF OFF, 0.1% (1kHz), 0.3% (100 - 20,000 Hz): HPF ON	0.1% (1 kHz), 0.3% (20 - 20,000Hz): HPF OFF, 0.3% (100 - 20,000 Hz): HPF ON	0.1% (1 kHz) 0.15% (20-20,000 Hz)
Protection Circuit	Protection against excessive current flow due to overload, short circuit, unusual DC voltage output, temperature rise at power amp. heat sink (212°F [110°C]) or more), temperature rise inside the unit (176°F [80°C] or more)					
S/N Ratio	100 dB (A-weighted)					
Crosstalk	70 dB (A-weighted)					
Control/Monitor	--				Control input: Power ON/OFF status of the individual channels photocoupler input, drive voltage: 9 V DC (Min) - 14 V (Max), 12 V (Typ) Monitor output: Power ON/OFF status of the individual channels, Protection status of the individual channels, Fan operation status photocoupler open collector output, withstand voltage: 30 V DC, control current: Under 12mA Connector: RJ-45 connector × 2, Connection cable: Category 5 twisted pair cable for LAN (CAT5-UTP) Maximum cable distance: 1969ft (600m)	
LED Indicator	Power (blue) × 1, Input (green) × 4, Output (yellow) × 4, Peak (red) × 4, Protect (red) × 4		Power (blue) × 1, Input (green) × 2, Output (yellow) ×2, Peak (red) × 2, Protect (red) × 2		Power (blue) × 1, Input (green) × 4, Output (yellow) × 4, Peak (red) × 4, Protect (red) × 4	
Cooling	Forced air cooling					
Operating Temp.	-10°C to +40°C (14°F to 104°F)					
Operating Humidity	90% RH or less (no condensation)					
Finish	Panel: Aluminum, black, alumite; Case: Plated steel sheet					
Dimensions	18.98” (W) × 1.73” (H) × 15.82” (D) / 482 (W) × 44 (H) × 401.8 (D) mm				18.98” (W) × 3.48” (H) × 15.91” (D) 482 (W) × 88.4 (H) × 404.2 (D) mm	
Weight	15lbs (6.6kg)		11.02lbs (5 kg)		19.4lbs (8.8kg)	
Accessory	Power cord (6.56ft / 2m) x 1, Removable terminal plug (3 pins)x4, Tamper-proof cap x4		Power cord (6.56ft / 2m) x 1, Removable terminal plug (3 pins) x 2, Tamper-proof cap x2		Removable terminal plug (3 pins) x 4, Tamper-proof cap x 4	
Option	--	Matching transformer: MT-251H	--	Matching transformer: MT-251H		--

* 0 dB = 0.775 V

Optional Accessory - DA Series

MT-251H
Matching Transformer

• For DA-250DH, DA-250FH, and DA-500F-HL

Capacity: 0W – 250W
Primary Side: 100V line, 70V line
Secondary Side: 100V line, 70V line, 50V line, 35V line
Frequency Response: 30 - 18,000Hz (+0dB, -3dB)
Connection Terminal: M3 screw terminal, distance between barriers: 6.6mm
Dimensions: 4.3 (W) × 3.1 (H) × 4.8 (D)in
Weight: 6.2lbs

AV-20D Micro Amplifier

AV-20D
Micro Amplifier

The **AV-20D** introduces a new standard in small amps for plenum use. With ultra-compact size, a flexible compliment of inputs & power configuration, control features and carrying both UL2043 & Energy Star 2.0 certification, the **AV-20D** is an ideal choice for corporate meeting rooms, POS/signage & kiosks or any place where space and placement limitations are a factor.

MAIN FEATURES
- Micro Class D amplifier for use in meeting/board rooms & signage applications
- UL 2043-rated for plenum installation
- Energy Star certified including Auto Off/Standby
- 20W x 2 @ 4 Ohms / 40W @ 8 Ohms in Bridge Mode
- Small size (approx. 6" x 6" x 1.75") allows convenient & flexible placement.
- L/R Line inputs via: removable Transformer-Balanced Terminal Block, 1/8" TRS mini-jack and RCA connections
- Bass & Treble Controls
- Input signal present (-20dB) and Peak LED indicators
- Clip Limiter prevents distortion due to overload.
- Remote Volume Control port for use with 10kOhm pot

Power Consumption: Less than 1W: in standby mode
Less than 10W: with No Signal
Less than 60W: at rated output in all Channels
Input: Line 1 : -10dBV/-20dBV (switchable), 10kOhm, removable terminal block(3P)x2, balanced (transformer isolated)
Line 2 : -10dBV/-20dBV (switchable), 10kOhm, 3.5mm mini phone jack, unbalanced
Line 3 : -10dBV/-20dBV (switchable), 10kOhm, RCA pin jack (red & white), unbalanced
Output: 2 channel Speaker out: 15W @8 Ohm per each Channel, 20W @4 Ohm per each Channel, [Preferred] BTL: 40W @8Ohm
Terminal: Removable terminal block(4P) (rear panel) [preferred] Screw-Lock type Connector
Efficiency: More than 70% at rated output in all Channels
Power Supply: AC100V-240V, 50Hz/60Hz
AC inlet on rear panel
Frequency Response: 20Hz to 20kHz +-3dB
(0dB = 1V, Reference = 1kHz)

Protection: Thermal protection (auto recovery), Short circut protection ([preferred] auto recovery), Over current protection (auto recovery)[Preferred] DC protection, Power source protection (Circuit Breaker)
S/N Ratio: More than 74dB (B.P. filter: 20Hz-20kHz, or a-weight)
THD+N: Less than 0.15% @ 1kHz, xW (with best THD)
Ventilation: Normal air ventillation Fin or Mesh to apply for UL2043
Operating Temperature: 14°F to +104°F
Finish: Black metal case
Dimensions: 5.9 L x 1.8 H x 5.9 D in (H should fit for EIA Rack)
Accessory: MB-AV20PM Metal Pole Mount Bracket, MB-DM820 Metal Desk-mount Bracket, MB-AV20RM Metal Rack Mount Kit (1 or 2 amplifiers are mountable in 1 unit)

* 0 dB = 1 V

Optional Accessories

MB-AV20PM
Metal Pole Mount Bracket

MB-DM820
Metal Desk-mount Bracket

MB-AV20RM
Metal Rack Mount Kit
(1 or 2 amplifiers are mountable in 1 unit)

MT-S0301
Matching Transformer

The MT-S0301 allows for a 30W @ 70V output by connecting to the bridge output of the AV-20D.

The Mt-S0301 is not plenum-rated on its own. It must be installed inside of a plenum-rated speaker back can such as the HY-BC580U, or under the ceiling, to be considered plenum-rated.

Rated Input Power: 30W
Primary Side: 100V line: 330Ω (30W), 1kΩ (10W)/ 70V line: 170Ω (30W), 330Ωs (15W), 1kΩ (5W)
Secondary Side: 8Ω
Weight: 370g

D-2000 Series Digital Mixing Systems

D-2008SP
Digital Mixing Processor Unit

TOA's **D-2000 Series** integrates high-performance mixing, matrixing and processing functions to meet a wide scope of sound reinforcement applications. Expandable to a maximum system configuration of **128 combined inputs and/or outputs**, the **D-2000** Series includes various modules and peripherals that can be combined to create the best possible sound in small to medium sized venues.

MAIN FEATURES
- Ideal for applications including; hotel banquet and function rooms, indoor sports facilities, multi-purpose halls, houses of worship, and more
- NOM (Number of Open Microphones) - automatically adjusts output levels based on the total number of open microphones
- Ducker function (auto-mute function) - automatically worked to attenuate outputs of channels with low priority
- Highly effective feedback suppression: providing feedback elimination for up to 4 channels. In addition, each channel can control 12 problem frequencies, making it convenient for feedback suppression in different areas of the same hall.
- 4 bus assignable feedback suppressions with 2 versatile suppression modes: Auto mode or realtime dynamic mode
- Delay, high-pass, low-pass and notch filters, parametric equalizers, compressor/auto leveler, gate, cross-overs and crosspoint gain
- 32 preset memories for user convenience
- Intuitive GUI helps streamline settings and adjustments
- D-2000 Series units can be used in conjunction with the optional D-911 VCA Fader Unit (page 14) providing analog mixer user interface
- RS-232C port allows external control when connected to external devices such as AMX* and Crestron* control units
- User-specific configurations
- 24-bus matrix: flexible input-to-output signal routing for zoning or room-combining
- A 128 combined input and/or output system can be constructed by connecting four D-2008SP units using the CobraNet* module. LAN-connected D-2008SP units can be remotely operated from TOA's PC software
- Works with optional Q-D-2012C fader controller using LAN connection
- 5 year warranty

Power Source: 120V AC (CU version), 50/60Hz
Power Consumption: 76W
Frequency Response: 20Hz – 20kHz, ±1dB (+4dB* input)
Input and Output: Input: Max. 32 channels, modular construction (modules optional)
Output: Max. 32 channels, modular construction (modules optional)
Monitor bus: 1 stereo input, 1 stereo output/Connector: RJ45 connector/Connection cable: Shielded Category 5 or higher twisted pair LAN cable (CAT5-STP)/Maximum cable distance: 100m (between D-2008SP and D-2012C)
Headphone: 1 stereo

Signal Processing
Feedback Suppression Function: 12 filters (auto/dynamic), maximum 4 bus channels
Auto Mixing Function: Ducker (automatic muting), NOM attenuation
Auto-Mixing Group: 4 groups
Equalizer/Filter: Parametric equalizer; 20Hz – 20kHz, ±15dB, Q; 0.267 – 69.249
Filtering; High-pass filter 20Hz – 20kHz, 6dB/oct, 12dB/oct, Low-pass filter 20Hz – 20kHz, 6 dB/oct, 12 dB/oct, Notch filter 20Hz – 20kHz, Q; 8.651 – 69.249, All-pass filter 20Hz – 20kHz, Q; 0.267 – 69.249, High shelving filter 6Hz – 20kHz, ±15dB, Low shelving filter 20 – 500Hz, ±15dB, Horn equalizer 20kHz, 0 to +18dB (0.5dB steps)
Crossover filter; 20Hz – 20kHz, 6dB/oct, 12dB/oct, 18dB/oct, 24dB/oct

Compressor/Auto-Leveler: (Compressor mode)
Threshold: -20 to +20dB (1dB steps)
Ratio; 1:1, 1.1:1, 1.2:1, 1.3:1, 1.5:1, 1.7:1, 2:1, 2.3:1, 2.6:1, 3:1, 4:1, 5:1, 7:1, 8:1, 10:1, 12:1, 20:1, ∞:1
Attack time; 0.2ms to 5s, Release time; 10ms to 5s
Gain; -∞ to +10dB
(Auto-Leveler mode)
Target level: -20 to +10dB (1dB steps)
Maximum gain; 0 to +20dB (1dB steps)
Attack time; 10ms to 10s/Release time; 100ms to 10s
Output Delay: Delay time; 0 – 1360 ms (0.021 ms steps)
BUS Delay: Delay time; 0 – 677 ms (0.021 ms steps)
Matrix: Input; Max. 34 (32 + 2) channels x 24 buses, Output; Max. 44 (24 + 4 + 16) buses x 32 channels
CobraNet Matrix: Input; Max. 16 channels x 24 buses, Output; Max. 28 (24 + 4) buses x 16 channels
Crosspoint Gain: -∞ to 0dB (1dB steps)
Preset memory: 32
Auxiliary Function: Key Locking function
Control: RS-232C, D-sub connector (9 pins), Remote control Module: Remote control module slot: 2
Operating Temperature: +5° C to +40°C
Finish: Panel; Aluminum, hair-line finish, black/ Case; Surface-treated steel plate, black, 30% gloss
Dimensions: 19 (W) × 5.2 (H) × 13.5 (D)in
Weight: 14lbs

Accessory: Power cord (6.6ft) x 1, Rack mounting screw x 4, CD (Set-up software) x 1, Module mounting screw (spare) x 4, Blank panel (preinstalled on the module slot) x 8
Option: Mic/line input module: D-2000AD1, D-921E, D-921F, D-922E, D-922F/ Stereo select input module: D-936R/ Digital input module: D-923AE/ Line output module: D-971E, D-971M, D-971R, D-2000DA1/Digital output module: D-961SP, D-972AE/ CobraNet interface module: D-2000CB/ Remote control module: D-981, D-983/ VCA control module: D-984VC
Personal Computer Requirements
CPU: Intel Pentium4 2GHz or higher
Memory: 1.5GB or more (2 GB or mor recommended)
Display: 1024 × 768 resolution or higher
Free hard Disk Space: 16 MB or more (for D-2000 Setting Software installation)
500 MB or more (when "NET Framework" needs to be installed)
LAN Card: Compatible to 10BASE-T or faster connection
OS: Windows XP SP2 or later, Windows Vista (32/64-bit edition), Windows 7 (32/64-bit edition)
Required Component: NET Framework3.5SP1

*Pentium is a registered trademark of Intel Corporation.
*Windows, Windows Vista is a registered trademark of Microsoft Corporation.

Q-D-2012C
Remote Console Unit

The **Q-D-2012C** is a 6U rack mountable Remote Console Unit designed for exclusive use with the **D-2008SP** Digital Mixing Processor Unit. Assigned to any desired channels inside the **D-2008SP** by the dedicated software, the **Q-D-2012C**'s 12 motorized faders and 8 rotary encoders can remotely adjust their volumes. Desired preset memories can be recalled using 8 function keys. It is equipped with 1 channel line input (stereo), which allows the audio signal to be transmitted to the **D-2008SP** via monitor bus. Audio signals inside the **D-2008SP** can be monitored via monitor bus through headphones connected to a stereo headphone output. The **Q-D-2012C** can be installed on a desk with the additional use of an optional **Q-D-2012AS** Console Case.

Power Source: 220 – 240V AC, 50/60Hz
Power Consumption: 18W
Volume Adjustment: 100mm motorized fader × 12
Rotary encoder × 8
Line Input: 1 channel (stereo), +10 to -20dB*, 10k ohms, unbalanced, RCA Pin-jack
Headphone Output: Stereo 100mW + 100mW (32 ohms load), standard stereo phone-jack
Monitor Bus: 1 stereo input, 1 stereo output/Connector: RJ45 connector
Connection cable: Shielded twisted pair (STP) Cat 5 or higher LAN cable (2 pairs of data lines)
Maximum cable distance: 100m (between D-2008SP and switching hub)
LAN: Network I/F: 10BASE-T/100BASE-TX (Automatic-Negotiation) RJ45 connector, Connected via a switching hub
Network protocol: TCP/IP
Connection cable: Shielded twisted pair (STP) 5 or higher (LAN cable
Maximum cable distance: 100m (between D-2008SP and switching hub)
Control: RS-232C: D-sub connector (9 pins) for maintenance use
Finish: Panel; Surface-treated steel plate, Laminated with palycarbonete sheet, gray, mat/Rack mounting bracket: Surface-treated steel plate, gray, mat
Dimensions: 19 (W) × 10.5 (H) × 5.4 (D)in
Weight: 14.6lbs
Accessory: Power cord (6.6ft) × 1, Rack mounting screw × 4, Fader knob (yellow) × 3, Fader knob (red) × 3, Cord clamp (fitting screw) × 1
Option: Console case: Q-D-2012AS

*0dB = 0.775V

Q-D-2012AS
Console Case for Q-D-2012C

Finish: Side panel: MDF, black, paint, mat
Armrest: MDF, synthetic-leathered, black, mat
Decorative panel: Stainless steel, silver
Dimensions: 20 (W) × 5 (H) × 13.1 (D)in (assembled)
Weight: 5.1lbs (assembled: 16.5lbs)
Accessory: Assemble screw × 11, Rubber foot × 4, Rubber foot mounting screw × 4

D-2000 Series Modules

D-2000AD1
MIC/LINE INPUT MODULE
MAIN FEATURES
- 4-channel, XLR connectors
- A/D converter: 24 bit
- Phantom power supply (48V)
- THD: 0.008% or less

D-2000DA1
LINE OUTPUT MODULE
MAIN FEATURES
- 4-channel, XLR connectors
- D/A converter: 24 bit
- THD: 0.008% or less

D-2000CB
CobraNet* INTERFACE MODULE
MAIN FEATURES
- Allows audio transmission among D-2008SP's.

* CobraNet* was developed by Cirrus Logic, a US company, and is network protocol utilizing Ethernet networks to perform high-quality multi-channel digital transmission. It allows using existing Ethernet equipment such as CAT-5 switching hubs.
** CobraNet is a registered trademark of Cirrus Logic Corporation*

	D-2000AD1
Input	4 channels, Mic/Line selectable Mic: -50/-36dB*, 2.6kΩ, electronically-balanced Line: -10dB*, 2.6kΩ/+4dB*, 7kΩ, electronically-balanced Connector: XLR-3-31 equivalent Phantom power supply (48V DC can be used when set for the Mic) Ground lift switch
A/D Converter	24 bit
THD	0.008% or less (+4dB*1 input)

	D-2000DA1
Output	4 channels, +4dB*1/-10dB*1 (changeable), adaptable load of 600Ω or more, balanced (electronically-balanced)/ unbalanced (changeable), XLR-3-32 equivalent
D/A Converter	24 bit
THD	0.008% or less

	D-2000CB
Network I/F	CobraNet*: 100BASE-TX, PRIMARY/SECONDARY 2 system, RJ45 connector, enables decentralized installation. (audio transmission only) Connection Cable: shielded twisted pair (STP) CAT-5 or higher LAN cable (note: this network should be completely independent of other LAN.) Number of D-2008SP Connection: Max. 4 Switching Sub Stage: Max 7 Max Extend Distance: 100m (328.1ft) (connected via a switching hub)
Input	16 channels, 20/24 bit
Output	16 channels, 20/24 bit

D-901 Digital Mixer

D-901
Digital Mixer

TOA's **D-901** is a 19-type rack-mounted (3U high) digital mixer configured with 12 inputs, 8 buses, and 8 outputs. It features signal processing functions necessary for sound systems such as feedback suppression and auto-mixing. Modular construction permits flexible configuration of inputs and outputs, from 2-IN/4-OUT to 12-IN/8-OUT systems. All functional parameters can be set at the unit. Settings can be stored in the unit's internal memory as "preset memory" and can be recalled using the front panel-mounted operation keys.

MAIN FEATURES

DIGITAL MODULAR MIXER

- Ideal for audio presentations, corporate boardrooms and houses of worship
- Modular design allows versatile configurations of up to 12 inputs and 8 outputs
- Intuitive operation via front panel display and controls
- Auto-Mixing allows "set-and-forget" operation
- Feedback Suppression automatically attenuates up to 12 problem frequencies
- Essential audio processing tools consisting of compressors, gates, crossovers, multi-band filtering, parametric, high/low-pass, all-pass and notch filters, horn EQ, high/low shelving and output delay
- Eight bus matrix with crosspoint gain control allows flexible input-to-output signal routing for zoning or room-combining
- Eight levels of assignable ducking for multi-level priority configurations
- PC software for offsite programming and archiving settings
- Input and output channel metering
- 16 internal memories for storage and recall of different signal routing and parameter configurations
- Eight programmable switch inputs for activation of memory, volume up/down, channel on/off and stereo input selection
- Eight programmable relay outputs for activate during memory, channel on/off, input status and stereo input selection
- AMX and Crestron software modules available (by these providers) - connects via RS-232
- 5 year warranty

Power Source: 120V AC (US version), 50/60 Hz
Power Consumption: 27W
Frequency Response: 20Hz – 20kHz, ±1dB (+4dB* Input)
Input: Max. 12 channels, modular construction (modules optional)
Output: Max. 8 channels, modular construction (modules optional)
Signal Processing
Feedback Suppression Function: 12 filters (auto/dynamic)
Auto Mixing Function: Ducker (automatic muting), NOM attenuation
Auto-Mixing Group: 4 groups
Equalizer/Filter: Parametric equalizer; 20Hz – 20kHz, ±15dB, Q; 0.267 – 69.249/**Filtering;** High-pass filter 20Hz – 20kHz, 6dB/oct,
12dB/oct/ Low-pass filter 20Hz – 20kHz, 6 dB/oct, 12dB/oct/ Notch filter 20Hz – 20kHz, Q; 8.651 – 69.249/ All-pass filter 20Hz – 20kHz, Q; 0.267 – 69.249/ High shelving filter 6 – 20kHz, ±15dB/ Low shelving filter 20 – 500Hz, ±15dB/ Horn equalizer 20kHz, 0 to +18dB (1dB steps)/**Crossover filter;** 20Hz – 20kHz, 6dB/oct,
12 dB/oct, 18dB/oct, 24dB/oct
Compressor/Auto-Leveler: (Compressor mode) Threshold: -20 to +20 dB (1dB steps)/**Ratio;** 1:1, 2:1, 3:1, 4:1, 8:1, 12:1, 20:1, ∞:1/ **Attack time;** 0.2ms to 5s/**Release time;** 10ms to 5s/Gain; -∞ to +10dB/ **(Auto-Leveler mode) Target level:** -20 to +10dB (1dB steps)/**Maximum gain;** 0 to +20dB (1dB steps)/ **Attack time;** 10ms – 10s/**Release time;** 100ms to 10s
Delay: Delay time; 0 – 682.6 ms (0.021 ms steps)
Matrix: 12 x 8
Crosspoint Gain: -∞ to 0dB (1dB steps)
Preset memory: 16
Auxiliary Function: System Locking function
Control: RS-232C, D-sub connector (9 pins), Remote control module (option)
Front Panel Section: Preset memory recall key; 8, LCD screen, screen shift key (up/down/left/right), setting knob/Input level indicator; Dual color LED/Output level indicator; Dual color LED/ Channel selector key; 12 (input channel selection), 8 (output channel selection)/Channel volume control; 1 (input channel selection), 1 (output channel selection)
Rear Panel: Input module slot; 6 (input/output module slot: 2)/ Output module slot; 2/Remote control module slot;1
Operating Temperature: +41°F to +104°F
Finish: Panel; Aluminum, hair-line finish, black/ Others; Pre-coated steel plate, black, 30% gloss
Dimensions: 19 (W) × 5.2 (H) × 12.6 (D)in (excluding projection)
Weight: 15.2lbs
Accessory: Power cord (6.6ft) x 1, Rack mounting screw x 4, Rack mounting bracket (pre-installed on the unit) x 2, Module mounting screw (spare) x 4, Blank panel (pre-installed on the module slot) x 9

* When installing the unit, never block the intake vents provided in the unit's bottom near the rear.

D-901/D-2000 Series Modules and Optional Accessories

D-911
VCA Fader Unit

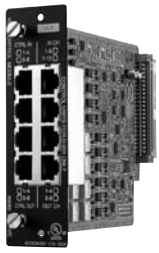
MAIN FEATURES

Remote Controller for D-901 & D-2000

- Remote control of up to twelve inputs and eight outputs
- Eight programmable control switches and LED's
- Connects to D-984VC module via Cat5 cables (maximum distance 100m / 328ft using Cat5)
- Five year warranty

Power Supply: 5V DC (supplied from the optional D-984VC)
Connector: RJ45 connector × 8
Input Fader Control: Input fader (100mm) × 12
Output Volume Control: Output volume control × 8
Contact Control: Illuminated switch × 8
Remote Output: No-voltage make contact output (contact capacity: 30V DC, 4A)
Remote Switch: Seesaw switch for activating the remote function of the power distributor
Finish: Panel; Pre-coated steel plate, black, 30% gloss
Dimensions: 19 (W) × 7 (H) × 2.4 (D)in (excluding projection)
Weight: 6lbs
Accessory: Fader knob (Red, Yellow) × 3 each, Volume knob (Red) × 2, Rack mounting screw × 4,
Rack mounting bracket (pre-installed on the unit) × 2

D-984VC
VCA Control Module



MAIN FEATURES

- Interface to D-911 Remote Controller via Cat5 cables or configure custom interface
- Eight RJ-45 connectors
- Control up to 12 inputs, eight outputs
- Eight programmable switch closure inputs for activation of memory, volume up/down, channel on/off and stereo input selection
- Eight programmable relay outputs of memory, channel on/off, contact input status and stereo input selection

VCA Control Input: +5V, GND, Terminal 1 – 20 (12 input channels, 8 output channels), RJ45 connector × 4/Control contents: Volume control of each input/output channel/ Variable range: -∞dB to +0dB
Contact Input: COM + Terminal 1 – 8: Open voltage: 5V DC, short-circuit current: 5mA, RJ45 connector × 2
Control
Preset Memory Selection: Any preset memory can be recalled./Control method: No-voltage make of over 100ms/No-voltage make single pulse of over 100ms
Volume Control: Any input/output channel volume can be turned UP or DOWN./Control method: 1 step variation for no-voltage make single pulse of over 100ms/1 step continuous operation for every 70ms for no-voltage make of over 100ms. Can be reset when at break./Variable Range: -∞dB to +10dB
Channel: Any input/output channel can be turned ON and OFF./Control method: No-voltage make of over 100ms/No-voltage make single pulse of over 100ms
Stereo Selection: Input channel lines of the D-936R (optional), or the D-937SP (optional) (4 stereo input module) can be selected./Control method: No-voltage make of over 100ms/No-voltage make single pulse of over 100ms
Contact Output: COM + Terminal 1 – 8: No-voltage make contact, contact capacity: 24V DC, 100mA, RJ45 connector × 2
Finish: Panel; Pre-coated steel plate, black, 30% gloss
Dimensions: 1.4 (W) × 4.7 (H) × 7 (D)in
Weight: 170g

D-921F
Mic/Line Input Module (24 bits Monaural Type)

MAIN FEATURES
- Two balanced mic or line level inputs
- 24-bit A/D converters
- Adjustable input gain
- Phantom power
- XLR-F connectors

Input: 2 channels, Mic/Line changeable/
Mic; -50/-36dB*, 4.7kΩ, electronically-balanced, equivalent to XLR-3-31 type/Line;
-10/+4dB*, 10kΩ, electronically-balanced, equivalent to XLR-3-31 type/
Phantom power supply (can be used when set for the microphone)/15V: (option: D-901, DP-K1, D-2008SP)/
12V: (option: SX-2100AI)/Ground lift switch
A/D Converter: 24 bits
Sampling Frequency: 48kHz
Frequency Response: 20Hz – 20kHz, ±1 dB (+4dB* input)
Dynamic Range: 100 dB (IHF-A weighted) or more (+4dB* input)
Finish: Panel; Pre-coated steel plate, black , 30% gloss
Dimensions: 1.4 (W) × 4.7 (H) × 7 (D)in
Weight: 150g

* 0dB = 0.775V

D-921E
Mic/Line Input Module (24 bits Monaural Type)

MAIN FEATURES
- Two balanced mic or line level inputs
- 24-bit A/D converters
- Adjustable input gain
- Phantom power
- Phoenix-style terminal block

Input: 2 channels, Mic/Line changeable/Mic; -50/-36dB*, 4.7kΩ, electronically-balanced, removable terminal block (3 pins)/Line; -10/+4dB*, 10kΩ, electronically-balanced, removable terminal block (3 pins)/Phantom power supply (can be used when set for the microphone)/15V: (option: D-901, DP-K1, D-2008SP)/12V: (option: SX-2100AI)
Ground lift switch
A/D Converter: 24 bit
Sampling Frequency: 48kHz
Frequency Response: 20Hz – 20kHz, ±1dB (+4dB* input)
Dynamic Range: 100dB (IHF-A weighted) or more (+4dB* input)
THD: 0.05% or less (+4dB* input)
Finish: Panel; Pre-coated steel plate, black , 30% gloss
Dimensions: 1.4 (W) × 4.7 (H) × 7 (D)in
Weight: 140g
Accessory: Removable terminal block type connector (pre-installed on the unit) × 2

* 0dB = 0.775V

D-922F
Mic/Line Input Module (20 bits Monaural Type)

MAIN FEATURES
- Two balanced mic or line level inputs
- 20-bit A/D converters
- Adjustable input gain
- Phantom power
- XLR-F connectors

Input: 2 channels, -50/-36/-10/+4dB* (Selectable with the DIP switch), 4.7kΩ, electronically-balanced, equivalent to XLR-3-31 type/Phantom power supply (can be set with DIP switch)/15V: (option: D-901, DP-K1, D-2008SP)/12V: (option: SX-2100AI)/
Ground lift switch (can be set with the DIP switch)
A/D Converter: 20 bits
Sampling Frequency: 48 kHz
Frequency Response: 20Hz – 20kHz, ±1dB (+4dB* input)
Dynamic Range: 85dB (IHF-A weighted) or more (+4dB* input)
THD: 0.2% or less (+4dB* input)
Finish: Panel; Pre-coated steel plate, black, 30% gloss
Dimensions: 1.4 (W) × 4.7 (H) × 7 (D)in
Weight: 135g

* 0dB = 0.775V

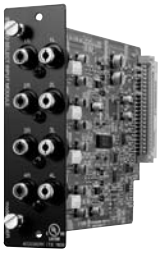
D-922E
Mic/Line Input Module (20 bits Monaural Type)

MAIN FEATURES
- Two balanced mic or line level inputs
- 20-bit A/D converters
- Adjustable input gain
- Phantom power
- Phoenix-style terminal block connectors

Input: 2 channels, -50/-36/-10/+4dB* (Selectable with the DIP switch), 4.7kΩ, electronically-balanced, removable terminal block (3 pins)/Phantom power supply (can be set with the DIP switch)/15V: (option: D-901,
DP-K1, D-2008SP)/12V: (option: SX-2100AI)/
Ground lift switch (can be set with the DIP switch)
A/D Converter: 20 bits
Sampling Frequency: 48 kHz
Frequency Response: 20Hz – 20kHz, ±1dB (+4dB* input)
Dynamic Range: 85dB (IHF-A weighted) or more (+4dB* input)
THD: 0.2% or less (+4dB* input)
Finish: Panel; Pre-coated steel plate, black, 30% gloss
Dimensions: 1.4 (W) × 4.7 (H) × 7 (D)in
Weight: 125g
Accessory: Removable terminal block type connector (pre-installed on the unit) × 2

* 0dB = 0.775V

D-936R
Stereo Select Input Module



MAIN FEATURES
- Four stereo connector pairs
- Unbalanced line level
- Individual input gain
- Programmable switching between connector pairs or summing mode
- Occupies two input channels
- RCA pin jack connectors

Input: monaural x 2/-10dB*, 10k ohms, RCA pin jack
A/D converter: 24 bits
Frequency Response: 20Hz – 20kHz, ±1dB (+4dB* input)
Sampling Frequency: 48 kHz
Dynamic range: 100dB (IHF-A weighted) or more
THD: 0.05% or less
Finish: Panel: Pre-coated steel plate, black, 30% gloss
Dimensions: 1.4 (W) × 4.7 (H) × 7 (D)in
Weight: 145g

* 0dB = 0.775V

D-923AE
Digital Input Module

MAIN FEATURES

AES/EBU Digital Input Module

- Two digital inputs
- AES/EBU format
- XLR-F connector
- Maximum distance: 328ft (100m)

Input: 2 channels, 2.0 – 7.0V (p-p), 110Ω, XLR-3-31 or equivalent
Applicable Format: AES/EBU (2 channel multiplexed)
Sampling Frequency: 32 – 48kHz
Finish: Panel; Pre-coated steel plate, black, 30% gloss
Dimensions: 1.4 (W) × 4.7 (H) × 7 (D)in
Weight: 130g

D-971M
Line Output Module

MAIN FEATURES

- Four balanced line level outputs
- XLR-M connectors

Output: 4 channels, +4 dB*, adaptable load of over 600 ohms, electronically-balanced, equivalent to XLR-3-32 type
D/A Converter: 24 bits
Frequency Response: 20 – 20,000 Hz, ±1dB
Sampling Frequency: 48kHz
Dynamic Range: Over 100dB (IHF-A weighted)
THD: Under 0.05%
Finish: Panel; Pre-coated steel plate, black, 30% gloss
Dimensions: 1.4 (W) × 4.7 (H) × 7 (D)in
Weight: 165g

* 0dB = 0.775V

D-971E
Line Output Module

MAIN FEATURES

- Four balanced line level outputs
- Phoenix-style terminal block connectors

Output: 4 channels, +4dB*, adaptable load of over 600Ω, electronically-balanced, removable terminal block (3 pins)
D/A Converter: 24 bits
Frequency Response: 20Hz – 20kHz, ±1dB
Sampling Frequency: 48kHz
Dynamic range: Over 100dB (IHF-A weighted)
THD: Under 0.05%
Finish: Panel; Pre-coated steel plate, black, 30% gloss
Dimensions: 1.4 (W) × 4.7 (H) × 7 (D)in
Weight: 140g
Accessory: Removable terminal block type connector (pre-installed on the unit) × 4

* 0dB = 0.775V

D-981
Remote Control Module

MAIN FEATURES

- Eight programmable switch closure inputs for activation of memory, volume up/down, channel on/off and stereo input selection
- Eight programmable relay outputs of memory, channel on/off, contact input status and stereo input selection

Control input: COM + terminals 1 – 8; Open voltage; 5V DC, short-circuit current; 5mA removable terminal block (10 pins)
Control Preset memory selection: Any preset memory can be recalled./ Control method; No-voltage make of over 100ms/no-voltage make single pulse of over 100ms
Volume Control: Any input/output channel volume can be turned UP or DOWN./Control Method: 1 step variation for no-voltage make single pulse of over 100ms/1 step continuous operation for every 70ms for no-voltage make of over 100ms. Can be reset when at break./
Variable Range: -∞dB to +10dB
Channel: Any input/output channels can be turned ON and OFF./ Control method; No-voltage make of over 100ms/no-voltage make single pulse of over 100ms
Stereo Selection: Input channel lines of the D-936R (option) or the D-937SP (optional) (4 stereo input module) can be selected./ Control method; No-voltage make of over 100ms/No-voltage make single pulse of over 100ms
Control output: COM + terminals 1 – 8; No-voltage make contact input, contact capacity; 24V DC, 100mA removable terminal block (10 pins)
Finish: Panel; Pre-coated steel plate, black, 30% gloss
Dimensions: 1.4 (W) × 4.7 (H) × 7 (D)in
Weight: 125g
Accessory: Removable terminal block type connector (pre-installed on the unit) × 2

D-971R
Line Output Module

MAIN FEATURES
- Four stereo or mono sum line level outputs
- RCA pin jack connectors

Output: 4 channels (2 outputs for each channel), -10dB*, adaptable load of over 600Ω, RCA pin jack
D/A Converter: 24 bit
Sampling Frequency: 48kHz
Frequency Response: 20 – 20,000 Hz, ±1dB
Dynamic range: Over 100dB (IHF-A weighted)
THD: Under 0.05%
Finish: Panel; Pre-coated steel plate, black, 30% gloss
Dimensions: 1.4 (W) × 4.7 (H) × 7 (D)in
Weight: 150g

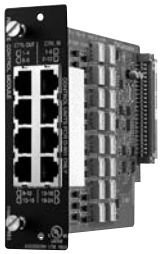
* 0dB = 0.775V

D-972AE
Digital Output Module

MAIN FEATURES
AES/EBU Digital Input Module
- Four digital outputs
- AES/EBU format
- XLR-M connectors
- Maximum distance: 328ft (100m)

Output: 4 channels, 5.0V (p-p), 110Ω, XLR-3-32 or equivalent × 2
Applicable Format: AES/EBU (2 channel multiplexed)
Sampling Frequency: 48kHz
Finish: Panel; Pre-coated steel plate, black, 30% gloss
Dimensions: 1.4 (W) × 4.7 (H) × 7 (D)in
Weight: 130g
Accessory: Ferrite clamp × 2

D-983
Remote Control Module



MAIN FEATURES
- Twenty-four programmable switch closure inputs for activation of memory, volume up/down, channel on/off and stereo input selection
- Sixteen programmable relay outputs of memory, channel on/off, contact input status and stereo input selection

Contact Input: COM + Terminal 1 – 24: Open voltage: 5V DC, short-circuit current: 5mA, RJ45 connector × 4
Control
Preset Memory Selection: Any preset memory can be recalled./Control method: No-voltage make of over 100ms/No-voltage make single pulse of over 100ms
Volume: Any input/output channel volume can be turned UP or DOWN./Control Method: 1 step variation for no-voltage make single pulse of over 100ms/1 step continuous operation for every 70ms for no-voltage make of over 100ms. Can be reset when at break./Variable Range: -∞dB to +10dB
Channel: Any input/output channel can be turned ON and OFF. /Control method: No-voltage make of over 100ms/No-voltage make single pulse of over 100ms
Stereo Selection: Input channel lines of the D-936R (option), or the D-937SP (optional) (4 stereo input module) can be selected./Control method; No-voltage make of over 100ms/No-voltage make single pulse of over 100ms
Contact Output: COM + Terminals 1 – 16: No-voltage make contact, contact capacity: 24V DC, 100mA, RJ45 connector × 4
Finish: Panel; Pre-coated steel plate, black, 30% gloss
Dimensions: 1.4 (W) × 4.7 (H) × 7 (D)in
Weight: 170g

Digital Stereo Mixers

M-864D
Digital Stereo Mixer

The **M-864D** is a 4U rack mountable Digital stereo mixer having 8 monaural Mic/Line input channels and 7 stereo input channels, 6 output channels including 4 bus assignable monaural output channels and 1 stereo recording output channel. It is equipped with digital signal processing functions such as Automatic Resonance Control function (ARC) Feedback Suppressor function (FBS), Automatic stereo input mute function (AUTO MUTE or Ducker), and Parametric Equalizer. Advanced acoustic compensation can be automatically performed without using any acoustic measuring instruments. Furnished with various function setting buttons and 14 analog volume faders, the M-864D can be operated without the need for a PC. However, it can also be operated by connecting the PC or optional Remote control panel. It can be mounted in an EIA standard component rack (4U size).

Power Source: 100 – 120V AC, 60Hz (CU version)
Power Consumption: 30W
Frequency Response: 20Hz – 20kHz ±1dB
Sampling Frequency: 48kHz
Dynamic Range: 100dB or more (IHF-A weighted)
Distortion: 0.03% or less, 1kHz, +4dB* input/output, 20Hz – 20kHz BPF
Crosstalk: -80dB or less, 1kHz
Input: Monaural input. 8 channels, removable terminal block (3P) Phantom power (+24V DC, 10mA, ON/OFF switchable for each channel)/Gain setting (settable for each channel)
: PAD ON Gain min., +4dB* (max. +24dB*), 10kΩ, electronically-balanced/Gain max., -14dB* (max. +6dB*), 10kΩ, electronically-balanced
: PAD OFF Gain min., -10dB* (max. +10dB*), 7kΩ, electronically-balanced/Gain max., -56dB* (max. -36dB*), 7kΩ, electronically-balanced
Stereo input (L, R) 7 channel (1-A, 1-B, 1-C, 2-A, 2-B, 2-C, frontmounted input)
RCA jack (stereo mini jack provided on the front panel)
: -10dB* (max. +10dB*), 10kΩ
Trim gain for each individual channel: -∞ to 0dB (except frontmounted input)
⬎ 1-A (L), 1-B (L), and 1-C (L) are mixed after passing through each trim gain circuit (the same applies to R channel)
⬎ 2-A (L), 2-B (L), and 2-C (L) are mixed with front-mounted input after passing through each trim gain circuit (the same applies to R channel)
Output: Output, 4 channels, +4dB* (max. +24dB*), applicable load 600Ω or more, electronically-balanced, removable terminal block (3P)/ REC OUT (L, R): -10dB* (max. +10dB*), applicable load 1kΩ or more, RCA jack/Gain is adjustable
A/D Converter: 24 bits
D/A Converter: 24 bits
Preset Memory: 16**Signal Processing Section**
Automatic Resonance Control (ARC) Function: Automatic EQ curves by ARC, 4 channels (each output channel), settable independently on each channel, ARC measurement start switch × 1, ON/OFF LED × 1
Feedback Suppressor Function: Feedback suppressor filter creation, 8 channels (each monaural input channel), settable independently on each channel,ON/OFF switch × 8, ON/OFF LED × 8
Filter: 8 channels (each monaural input channel), settable independently each channel, high-pass filter: 20Hz – 20kHz
Tone Controller: BASS, Low-shelving filter: 20 – 500Hz, ±15dB/ MID, parametric equalizer: 20Hz – 20kHz, ±15dB, Q: 0.267 – 69.249
TREBLE, high-shelving filter: 6 – 20kHz, ±15dB/10 channels (each monaural input channel, each stereo mixing input Channel), settable independently on each channel
Equalizer: Parametric equalizer: 20Hz – 20kHz, ±15dB, Q: 0.267 – 69.249/4 channels (each output channel)
Matrix: 12 × 4
Crosspoint Gain: -∞ to 0dB in 1dB steps
Automatic Mute Function: Stereo input section matrix, independent control
Function: Input PAD (-16dB) control, low cut (cutoff frequency: 100Hz) control, analog output attenuator (-6dB, -12dB, -18dB, -24dB, -36dB, -42dB) control, front panel operation lock function, stereo summing function, function setting panel (3 rotary encoders)

Front Panel Section
Input Level Indicator: 3-point LED, 12 channels (each monaural
input channel, stereo 1L, 1R, 2L, 2R)
Output Level Indicator: 8-point LED, 4 channels (each output channel)
Auto Resonance Control (ARC) Measurement: ARC measuring start switch × 1, ON/OFF LED × 1
Feedback Suppressor (FBS) Function: ON/OFF switch × 8, ON/OFF LED × 8
Low Cut: ON/OFF switch × 8, ON/OFF LED × 8
Stereo Summing: ON/OFF switch × 2, ON/OFF LED × 2
Tone Control: BASS, MID, TREBLE/Settable on the function setting
panel, 10 channels (each monaural input channel, stereo 1L, 1R, 2L, 2R)
Monaural Input, Analog Setting: Gain setting, PAD ON/OFF, Phantom power ON/OFF/ Settable on the function setting panel, 8 channels (each monaural input channel)
Stereo Input, Analog Setting: Trim setting/ Settable on the function setting panel, 6 channels (1-A, 1-B, 1-C), (2-A, 2-B, 2-C)
REC OUT, Gain Setting: Gain setting/ Settable on the function setting panel, 2 channels (REC OUT L, REC OUT R)
Preset Memory Switching: Preset selection switch × 4, ON/OFF LED × 4
Front Panel Operation Lock: Operation lock switch × 1
Operation Status Indication: Operation status LED × 3
Function Setting Panel: Rotary encoder × 3, 10-point position indication LED × 3, Function mode LED × 3
Analog Volume Fader: Input volume fader × 10, Output volume fader × 4, 2 faders linkable with supplied gang bar
Control Section
Contact Input: 8 channels, open voltage: 24V DC, short-circuit current: 5mA, removable terminal block (10P)
Contact Output: 8 channels, no-voltage make contact, contact capacity: 24V DC/100mA, removable terminal block (10P)
Remote Control Panel: 2 channels, Maximum number of units: 8 units per channel/ 24V DC input x 2, termination ON/OFF switch x 1, removable terminal block (10P)/Maximum total cable length (star wiring): 800m (total for 2 channels)/Maximum cable length (daisy chain wiring): 400m per channel
Note: In daisy chain wiring, the number of units differs depending on the cable length, Star wiring and daisy chain wiring cannot be used together. Type of cable: Shielded CPEV cable (a pair of data cable and a pair of power supply cable) or shielded Cat 5 twisted pair cable for LAN (CAT5-STP)
Network: Network I/F: 1 channel of 10BASE-T/100BASE-TX (auto-negotiation), RJ45 connector, connection via switching hub/ Network protocol: TCP/IP/ Connection cable: Shielded Cat. 5 or higher twisted pair cable for LAN (Cat. 5-STP or better)/ Maximum cable length: 100m (between M-864D and switching hub)
Operating Temperature: 32°F to +104°F
Operating Humidity: 90% RH (no condensation)
Finish: Panel: Aluminum hairline, black/ Case: Surface-treated steel plate
Dimensions: 19 (W) × 7 (H) × 6.2 (D)in
Weight: 11.2lbs
Accessory: Power cord (6.6ft) × 1, Removable terminal plug (3P) × 12, Large type removable terminal plug (10P) × 2, Small type removable Terminal plug (10P) × 1, Fader gang bar × 4, Protection cover × 1, CD-ROM (containing setup software) × 1, Rack-mounting screw × 4
Option: Remote control panel: ZM-9011/9012/9013/9014/AC adapter: AD-246
*0dB = 0.775V

Personal Computer Requirements

Requirements: CPU: Intel Pentium4, 2GHz or faster/ Memory: 1.5GB or more (2GB recommended)/ Display: 1024 × 768 resolution or higher/ Free hard Disk Space: 16MB or more. however 600MB or more is required for the 32-bit version or 1.5GB or more for the 64-bit version when "NET Framework" is not yet installed/ Optical Driver: CD-ROM drive, Network Adapter: 10BASE-T or faster connection
OS: Windows XP SP3 or later, Windows Vista (32/64-it) SP1 or later, Windows 7 (32/64-it edition)
Required Component: NET Framework 4 Client Profile
*Windows is a registered trademark or trademark of Microsoft Corporation in the United States and/or other countries.
*Pentium is a registered trademark of Intel Corporation.
*Other company names and products are also trademarks of individual companies.

Optional Remote Control Modules

ZM-9011
Remote Panel

MAIN FEATURES
Assignable Remote Button Panel
- Fits in a standard dual-gang electrical box
- Four assignable buttons each with LED status indicator can control Xpoint settings (on/off, select), paging activation, scene and relay activation
- Assignable ID rotary adjustment on box
- Supplied matching decor plate
- Required RC-001T

Power Source: 24V DC (supplied from RC-001T)
Current Consumption: 50mA or less
Terminal: Removable terminal block (10 pins) **Connection Cable:** Shielded CPEV cable (paired data line and paired power line) or Category 5 twisted pair cable for LAN (CAT5-STP)
Operating Section: 4 function buttons
Indicator: 4 function indicators (green LED's)
Operating Temperature: 14°F to +104°F
Operating Humidity: 35% to 80% RH (no condensation)
Finish: Surface-treated steel plate, white, paint
Dimensions: 8.2 (W) × 5 (H) × 1.9 (D)in
Weight: 160g
Accessory: Box mounting screw (N0.6-32UNC × 30) × 2, Box mounting screw (M4 × 30) × 2, Panel mounting screw × 2, Removable terminal plug (10 pins) × 1
Note: Since no electrical box is supplied with the unit, prepare it separately.

ZM-9012
Remote Panel

MAIN FEATURES
Assignable Volume Controller
- Fits standard single-gang electrical box
- Rotary encoder can be assigned to control any input or output volume
- Multiple input or outputs may be "ganged" for master volume control
- Multi-segment LED indicator provides visual volume level status
- Supplied matching decor plate
- Removable terminal block
- Requires RC-001T

Power Source: 24V DC (supplied from RC-001T)
Current Consumption: 50mA or less
Terminal: Removable terminal block (10 pins)
Connection Cable: Shielded CPEV cable (paired data line and paired power line) or Category 5 twisted pair cable for LAN (CAT5-STP)
Operating Section: 1 volume control
Indicator: Level indicators (green LED's)
Operating Temperature: 32°F to +104°F
Operating Humidity: 35% to 80% RH (no condensation)
Finish: Surface-treated steel plate, white, paint
Dimensions: 8.2 (W) × 5 (H) × 2.3 (D)in
Weight: 160g
Accessory: Box mounting screw (N0.6-32UNC × 30) × 2, Box mounting screw (M4 × 30) × 2, Panel mounting screw × 2, Removable terminal plug
(10 pins) × 1
Note: Since no electrical box is supplied with the unit, prepare it separately.

ZM-9013
Remote Panel

MAIN FEATURES
Assignable Remote Button Panel
- Fits in a standard dual-gang electrical box
- Eight assignable buttons each with LED status indicator can control Xpoint settings (on/off, select), paging activation, scene and relay activation
- Assignable ID rotary adjustment on box
- Supplied matching decor plate
- Removable terminal block
- Required RC-001T

Power Source: 24V DC (supplied from RC-001T)
Current Consumption: 50mA or less
Terminal: Removable terminal block (10 pins)
Connection Cable: Shielded CPEV cable (paired data line and paired power line) or Category 5 twisted pair cable for LAN (CAT5-STP)
Operating Section: 8 function buttons
Indicator: 8 function indicators (green LEDs)
Operating Temperature: 32°F to +104°F
Operating Humidity: 35% to 80% RH (no condensation)
Finish: Surface-treated steel plate, white, paint
Dimensions: 4.7 (W) × 5 (H) × 2 (D)in
Weight: 300g
Accessory: Box mounting screw (N0.6-32UNC × 30) × 4, Box mounting screw (M4 × 30) × 4, Panel mounting screw × 4, Removable terminal plug
(10 pins) × 1
Note: Since no electrical box is supplied with the unit, prepare it separately.

ZM-9014
Remote Panel

MAIN FEATURES
Assignable Remote Button Panel w/Volume Control
- Fits in a standard dual-gang electrical box
- Four assignable buttons each with LED status indicator can control Xpoint settings (on/off, select), paging activation, scene and relay activation
- Assignable ID rotary adjustment on box
- Supplied matching decor plate
- Removable terminal block
- Required RC-001T

Power Source: 24V DC (supplied from RC-001T)
Current Consumption: 50mA or less
Terminal: Removable terminal block (10 pins) **Connection Cable:** Shielded CPEV cable (paired data line and paired power line) or Category 5 twisted pair cable for LAN (CAT5-STP)
Operating Section: 4 function buttons, 1 volume control
Indicator: 4 function indicators (green LEDs), Level indicators (green LEDs)
Operating Temperature: 32°F to +104°F
Operating Humidity: 35% to 80% RH (no condensation)
Finish: Surface-treated steel plate, white, paint
Dimensions: 4.7 (W) × 5 (H) × 2.3 (D)in
Weight: 300g
Accessory: Box mounting screw (N0.6-32UNC × 30) × 4, Box mounting screw (M4 × 30) × 4, Panel mounting screw × 4, Removable terminal plug
(10 pins) × 1
Note: Since no electrical box is supplied with the unit, prepare it separately.

M-633D
Digital Stereo Mixer

TOA's **M-633D Digital Stereo Mixer** is equipped with 12 input channels (6 monaural inputs and 3 stereo inputs), and 6 output channels (2 monaural outputs, 1 stereo output, and 1 stereo recording output). This unit performs advanced acoustic compensation by means of automatic processing without the use of an acoustic measuring instrument.

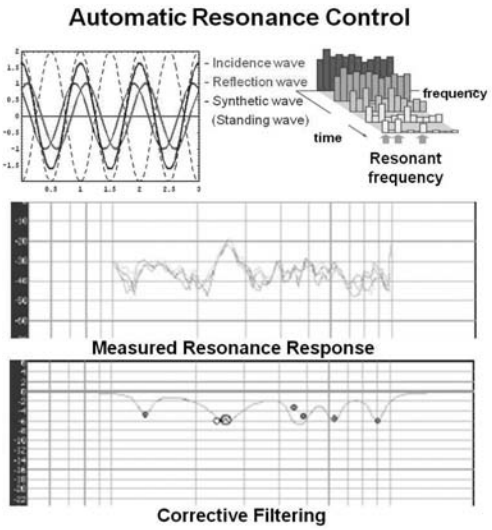
MAIN FEATURES
- 12 input channels (6 monaural inputs and 3 stereo inputs)
- 6 output channels (2 monaural outputs, 1 stereo output, and 1 stereo recording output)
- 2 monaural bus lines allow each input signal to be assigned to each bus line individually
- Provides automatic audio adjustment with push button ease
- Automatic Resonance Control function, Feedback Suppression function, and Automatic Clipguard enhance sound intelligibility
- Automatically eliminates unpleasant reverberation and feedback to deliver clear, highly articulate sound
- Ideal for houses of worship, gymnasiums, meeting rooms, and more.
- 5 year warranty

Power Source: 120V AC (CU version), 50/60Hz
Power Consumption: 13W
Frequency Response: 20Hz – 20kHz
Sampling Frequency: 48kHz
Dynamic Range: 90dB or more (IHF-A weighted)
Distortion: 0.03% or more, 1kHz, -10dB* input, 0dB* output (20Hz – 20kHz BPF)
Input: 6 monaural input channels (MONO IN 1 – 6), selectable independently from 3 types of inputs below for each channel
LINE: -10dB*, 2.4kΩ/MIC: -10dB*, 2.4kΩ/PHANTOM: -10dB*, 2.4kΩ supplies phantom power of +24V DC, 10mA electronically balanced
Removable terminal block (3 pins), phone jack
3 stereo inputs (L, R) (STEREO IN 1 – 3) -10dB*/10kΩ, RCA jack (STEREO IN 1 – 3), Stereo mini jack (ST IN 1)

Output: 2 monaural output channels (MONO OUT 1 – 3)
0dB* (applicable load: 1kΩ or more), electronically balanced, removable terminal block (3 pins)
1 stereo output (L, R) channel (ST OUT L, R)
0dB* (applicable load: 1kΩ or more), electronically balanced, removable terminal block (3 pins)
1 stereo output (L, R) channel (REC OUT L, R)
-10dB* (applicable load: 1kΩ or more), RCA jack
Bus Line: Monaural channel x 2, Stereo channel x 1
A/D Converter: 24 bits
D/A Converter: 24 bits
Signal Processing
Automatic Resonance Control Function: 3 out channels (each monaural output channel, stereo output L, R), independent settings for each channel, automatic creation of EQ curves (for sound field compensation)/ ARC measurement start switch × 1, Function ON/OFF check indicator × 1

Feedback Supressor Control Function: 6 channels (each monaural input channel), independent settings for each channel Function ON/OFF switch × 6, Function ON/OFF check indicator × 6
Automatic Clipguard Function: 6 channels (each monaural input channel), independent settings for each channel
Automatic Mute Function: Function ON/OFF switch × 1
Input Level Indicator: 2-color LED indicator: Green (for appropriate level)/red (for peak level)
Output Level Indicator: 2-color LED indicator: Green (for appropriate level)/red (for peak level)
Finish: Panel: Aluminum, black, hairline/Case: Pre-coated steel plate, black, 30% gloss
Dimensions: 16.5 (W) × 1.7 (H) × 13.4 (D)in
Weight: 8.8lbs
Accessory: Power cord (6.6ft) × 1, Removable terminal plug (3 pins) × 10, Rubber foot × 4, Rack mounting bracket × 2, Machine screw (M3 × 8) × 6, Rack mounting screw (M5 × 12) × 4

*0dB = 0.775V



M-243 Stereo Mixer

M-243
Stereo Mixer

TOA's **M-243 6-Channel Stereo Mixer** is a 19" rack-mountable stereo mixer that comes with two monaural inputs, four stereo inputs, one stereo output and two monaural outputs.

MAIN FEATURES
- Two mono mic/line inputs, each with compressor and high pass filter
- Four stereo inputs with RCA and 1/4" phone plug connectors
- Stereo output with separate paralleled record outputs
- Two mono outputs, switchable to stereo sum
- Inputs independently assignable to any combination of stereo and mono outputs
- Stereo and mono sub-inputs for direct access to individual mixing buses
- Auto-priority of mono over stereo inputs for paging/BGM applications
- Low and high frequency EQ for stereo output (with clipping indicators)
- Security cover and rack-mount kit included (1 RU)
- 5 year warranty

Power Source: 120V AC (L version), 50/60Hz
Power Consumption: 10W (120V AC version)
Monaural Input: Line: -10dB*, 10kΩ, unbalanced phone jack/ Mic: -60dB*, 1kΩ, balanced XLR3-pin connector/ Mic (Pad): -40dB*, 1kΩ, balanced XLR3-pin connector
Stereo Input (L, R): -10dB*, 10kΩ, unbalanced RCA jack
Auxiliary Stereo Input: +4dB*, 50kΩ, unbalanced phone jack
Stereo Output (L, R): +4dB*, 1kΩ, unbalanced phone jack
Monaural Output (1, 2): +4dB*, 1kΩ, unbalanced RCA jack
REC Output (L, R): -10dB*, 1kΩ, unbalanced RCA jack
Frequency Response: 20Hz to 20kHz (+1, -2dB)
THD: 0.01% or less (1kHz, rated input/output)

Noise Level (IHF-A): When all volume controls are in minimum position.
Stereo Output (L, R): -105dB* or less
Monaural Output (1, 2): -98dB* or less
When the stereo, monaural (1, 2) are in maximum position.
Stereo Output (L, R): -94dB* or less
Monaural Output (1, 2): -95dB* or less
Finish: Front Panel: Alumite, black/Case: Steel, black
Dimensions: 19 (W) × 1.8 (H) × 11.9 (D)in
Weight: 8.4lbs

*0dB = 0.775Vrms

Integrated DSP and Control Systems

DP-K1
Digital Audio Processor

The **DP-K1** is a 3U rack mountable Digital Audio Processor. It features Automatic Resonance Control (ARC) that automatically generates an optimum filter curve to improve sound clarity after measuring the acoustic characteristics in architectural space. It permits flexible configuration of inputs and outputs, from 2-IN/4-OUT to 8-IN/8-OUT using the optional modules. Each function is set by a PC using the dedicated software. The settings can be stored in the unit's internal memory and the stored preset memories can be recalled from the unit without connecting the PC.

MAIN FEATURES

DIGITAL MIXER

- Rack-mount digital mixer / processor for installed sound applications such as houses of worship, sports facilities, convention centers, airports, and others
- Modular design allows up to 8 mic/line inputs and 8 line outputs (modules not included)
- Auto Resonance Control (ARC):
  - Advanced measurement and processing algorithm improves speech intelligibility and sound quality in facilities with challenging acoustic environments such as houses of worship, sports facilities, convention centers, airports, and more
  - Automatically identifies room mode frequencies and applies an inverse response curve to compensate for the measured room response
- Essential audio processing tools — compressors, gates, crossovers, multi-band filtering, parametric, high/low-pass, all-pass and notch filters, horn EQ, high/low shelving and output delay
- Eight bus allows flexible input-to-output signal routing for zoning or room-combining
- Network interface for remote programming and maintenance
- PC software for offsite programming and archiving settings
- Flexible remote control with optional control modules installed:
  - Up to twenty-four programmable switch inputs for activation of memory, volume up/down, channel on/off and stereo input selection
  - Up to sixteen programmable relay outputs for activate during memory, channel on/off, input status and stereo input selection
- Store and recall up to eight different signal routing and parameter configurations
- Input and output channel metering
- Eight front panel memory select buttons
- 5 year warranty

Power Source: 100 – 120V AC (CU version), 50/60Hz
Power Consumption: 40W (450mA)
Frequency Response: 20Hz – 20kHz, ±1dB (+4 dB* input)
Sampling Frequency: 48 kHz
Input: Max. 8 channels, modular construction (modules option)
Output: Max. 8 channels, modular construction (modules option)
Signal Processing
Auto Resonance Control Function: Parametric equalizer: 20Hz – 20kHz, ±12dB, Q: 0.267 – 69.249
Level Control: +12 to -∞dB (0.5dB steps), with polarity selector
Equalizer/Filter: Parametric equalizer: 20Hz – 20kHz, ±12dB, Q: 0.267 – 69.249
Filtering: High-pass filter; 20Hz – 20kHz, 6dB/oct, 12dB/oct
Low-pass filter; 20Hz – 20kHz, 6dB/oct, 12dB/oct
Notch filter; 20Hz – 20kHz, Q: 8.561 – 69.249
All-pass filter; 20Hz – 20kHz, Q: 0.267 – 69.249
High shelving filter; 6 – 20kHz, ±12dB
Low shelving filter; 20 – 500Hz, ±12dB
Horn equalizer; 20kHz, 0 to +18dB (0.5dB steps)
Crossover filter: 20Hz – 20kHz, 6dB/oct, 12dB/oct, 18dB/oct, 24dB/oct
Compressor: Threshold: -16 to +24dB*/ Ratio: 1 : 1, 2 : 1, 3 : 1, 4 : 1, 8 : 1, 12 : 1, 20 : 1, -∞: 1 / Attack time: 0.02 – 100ms / Release time: 10ms to 5s
Noise gate: Threshold: -∞ to -26dB* / Attack time: 0.1 – 100ms / Release time: 20ms to 5s
Delay: Delay time: 0 – 682.0ms (0.02ms steps)

Matrix: 8 × 8
Level control: 0 to -∞dB (1dB steps), with polarity selector
Preset Memory: 8
Auxiliary Function: Key lock function
Setting Software: OS: Windows 2000/XP, Control system: 10 BASE-T/100 BASE-TX, Auto-Negotiation, RJ45 connector
Front Panel Section: Preset memory recall knob: 1/ Input indicator: Green LED / Output indicator: Green LED
Module Slot (Rear Panel): Input module slot: 4, Output module slot: 2, Remote control module slot: 1
Operating Temperature: +41°F to +104°F
Finish: Panel: Aluminum, hair-line finish, black Others: Pre-coated steel plate, black, 30% glossy
Dimensions: 19 (W) × 5.2 (H) × 12.6 (D)in (excluding protection)

Weight: 16.3lbs
Accessory: Power cord (6.6ft) × 1, Rack mounting bracket (pre-installed on the unit) × 2, Rack mounting screw × 4, Blanc panel (pre-installed on the unit) × 8, Module mounting screw (spare) × 4, CD (software) × 1
Option: Mic/Line input module: D-921E, D-921F, D-922E, D-922F/Stereo input module: D-936R/Digital input module: D-923AE, D-937SP/Line output module: D-971E, D-971M, D-971R/Digital output module: D-972AE/Remote control module: D-981, D-983

*0 dB = 0.775 Vrms
**Windows is a registered trademark of Microsoft Corporation.
Note: When installing the unit, never block the intake vents provided in the unit's bottom near the rear.

Equalizers

E-1231
1-Channel 1/3 Octave Graphic Equalizer

The **E-1231** is a single channel, 1/3 octave active graphic equalizer designed to allow clean, accurate audio equalization for stage, studio, or commercial applications.

MAIN FEATURES

28-BAND GRAPHIC EQUALIZER

- 28 filters on 1/3 octave center frequencies from 31.5 Hz to 16k Hz (+/- 12 dB)
- Noiseless center-detent slide controls with precision-calibrated linear scales
- High and low pass filters
- ±12 dB input gain control
- In/out peak level indicator
- Hardwire bypass if power fails
- Security cover and rack-mount brackets included (2 RU)
- 5 year warranty

Power Source: 120V AC, 50/60Hz
Power Consumption: 11W
Input Impedance: 10kΩ
Output Impedance: 600Ω
Frequency Response: 20Hz – 20kHz, ±1dB
Max. Input Level: +20dB* at 1kHz
Max. Output Level: +20dB* with 600Ω load
THD: 0.01% or less at 1kHz
(all sliders at 0 position, rated output)
Equalization Center Frequency: 31.5Hz, 40Hz, 50Hz, 63Hz, 80Hz, 100Hz, 125Hz, 160Hz, 200Hz, 250Hz, 315Hz, 400Hz, 500Hz, 630Hz, 800Hz, 1kHz, 1.25kHz, 1.6kHz, 2kHz, 2.5kHz, 4kHz, 5kHz, 6.3kHz, 8kHz, 10kHz, 12.5kHz, 16kHz

Control Equalizer Sliders: ±12dB
Input Level Control: ±12dB
Highpass Filter: 12dB per octave
(Adjustable cutoff frequency: 15 – 300Hz)
Lowpass Filter: 12dB per octave/6dB per octave
(adjustable cutoff frequency: 2.5kHz – 30kHz)
Hum and Noise: -94dB (EQ in, all sliders at 0 position, 20Hz – 20kHz B.P.F.)
Finish: Panel: Aluminum, black/Case: Steel, dark gray
Dimensions: 19 (W) × 3.5 (H) × 12.5 (D)in
Weight: 10lbs

* 0dB = 0.775V

E-232
2-Channel 2/3 Octave Graphic Equalizer

The **E-232** has two 2/3 octave 14-point equalizers. It can be mounted in a 19" equipment rack (1-unit size).

MAIN FEATURES

14-BAND DUAL CHANNEL GRAPHIC EQUALIZER

- 14 filters on 2/3 octave center frequencies from 40 Hz to 16k Hz (+/- 6 or 12 dB)
- Noiseless center-detent slide controls with precision-calibrated linear scales
- Independent selection for boost and cut of 6 or 12 dB
- ±12 dB input gain control and high pass filter
- In/out peak level indicator
- Automatic bypass if power fails EQ in/out with "hardwire" bypass if power fails
- Security cover and rack-mount brackets included (1 RU)
- 5 year warranty

Power Source: 120V AC, 50/60Hz
Power Consumption: 11W (120V version);
Input: +4dB* 30kΩ (GAIN: 0dB), unbalanced, phone-jack and screw terminal
Output: +4dB* 1kΩ, unbalanced, phone-jack and screw terminal
Max. Input Level: +32dB (GAIN: -12dB)
Max. Output Level: +20dB
Frequency Response: +1dB, -2dB (20 – 20,000Hz)
THD: 0.01% or less at 1kHz (rated output)
Equalization Center Frequency: 40Hz, 63Hz, 100Hz, 160Hz, 250Hz, 400Hz, 630Hz, 1kHz, 1.6kHz, 2.5kHz, 4kHz, 6.3kHz, 10kHz, 16kHz

Control Equalizer Sliders: Boost: +12dB, +6dB
Cut: -12dB, -6dB (switchable)
Gain Range: ±12dB
Highpass Filter: -12dB per octave
(adjustable cutoff frequency: 15Hz – 300Hz)
Hum and Noise (IHF-A): -98dB* (EQ: ON, HPF: 15Hz, GAIN: 0dB, in, all sliders at 0 position)
Finish: Front panel: Aluminum, black/Case: Steel, black
Dimensions: 19 (W) × 1.8 (H) × 12.2 (D)in
Weight: 8.4lbs
Accessory: Security cover × 1, Security cover fixing screw × 2, Rack mounting screw × 4, Rubber foot × 4, Blind label × 1, Power cord (6.6ft) × 1

* 0dB = 0.775V

Digital Speaker Processor

DP-SP3
Digital Speaker Processor

The **DP-SP3 Digital Speaker Processor** enables you to enhance your sound system easily and inexpensively. Designed specifically to work with speakers, the processor taps into characteristics of individual speakers and draws out their best possible performance, to help realize richer, more expressive sound in a variety of venues. The DP-SP3 has a built-in library of presets for the most popular TOA speakers, which enables you to enjoy well-balanced sound immediately, without going to the trouble of inputting complex parameter settings. In addition, a preset memory of up to 16 setting patterns allows you to instantly recall the setting you need for a particular venue. The processor is also packed with such essential audio processing functions as Equalizer, Crossover, Matrix, Compressor and Delay.

Power Source: 100 – 120V AC, 50/60Hz
Power Consumption: 25W
Frequency Response: 20Hz – 20kHz, ±1dB
Sampling Frequency: 96kHz
Dynamic Range: 110dB or more
Distortion: 0.03% or less, 1kHz, +4dB* input/output 20Hz – 20kHz BPF
Crosstalk: -80dB or less, 1kHz
Input: 2 channels, +4dB* (Max. +24dB*), 10kΩ, electronically balanced, removable terminal block (3P)
Output: 6 channels, +4dB* (Max. +24dB*), applicable load 600Ω or more, electronically-balanced, removable terminal block (3P)
A/D Converter: 24 bits
D/A Converter: 24 bits
Preset Memory: 16

Signal Processing Section
Equalizer/Filter: Parametric equalizer: 20Hz – 20kHz, ±12dB, Q: 0.267 – 69.249
Filter: High-pass filter 20Hz – 20kHz, 6dB/oct, 12dB/oct
Low-pass filter; 20Hz – 20kHz, 6dB/oct, 12dB/oct
Notch filter; 20Hz – 20kHz, Q: 8.561 – 69.249
All-pass filter; 20Hz – 20kHz, Q: 0.267 – 69.249
High-shelving filter; 20 – 20kHz, ±12dB
Low-shelving filter; 20 – 20kHz, ±12dB
Horn equalizer; 20kHz, 0 – 18dB in 0.5dB steps

Crossover: 2 ways, 3 ways, 4 ways
Crossover filter: 20Hz–20kHz, 6dB/oct, 12dB/oct, ±12dB, polarity switchable
Delay: 0 –170.656ms in 0.01ms steps
Compressor: Threshold: -20 to +20dB* in 1dB steps
Ratio: 1:1, 1.1:1,1.2:1, 1.3:1, 1.5:1, 1.7:1, 2:1, 2.3:1, 2.6:1, 3:1, 4:1, 7:1, 8:1, 10:1, 12:1, 20:1, ∞:1 Attack time: 0.2ms – 5s, Release time: 10ms – 5s Gain: -70 to +10dB
Delay: Delay time: 0 – 682.656ms in 0.01ms steps
Matrix: 2 × 6
Crosspoint Gain: -∞ to 0dB in 1dB steps
Function: Input PAD (-16dB) control, analog output attenuator (-∞ to 0dB in 1dB steps) control, EQ characteristic library for TOA speakers, input/output level indicator (4-point LED indicator), output MUTE switch × 6
Control
Contact Inputs: 4 channels, open voltage: 5V DC, short-circuit current: 5mA, removable terminal block (5P), control function: preset memory selection, volume control, and mute
Network: Network I/F: 1 channel of 10BASE-T/100BASE (auto-negotiation), RJ45 connector, connection via switching hub/ Network protocol: TCP/IP/ Connection cable: Shielded Cat. 5 or higher twisted pair cable for LAN (Cat. 5-STP or better)/ Maximum cable length: 100m (between DP-SP3 and switching hub)

Operating Temperature: 32°F to +104°F
Operating Humidity: 90% RH (no condensation)
Finish: Panel: Aluminum hairline, black/ Case: Surface-treated steel plate
Dimensions: 19 (W) × 1.7 (H) × 11.4 (D)in
Weight: 6.8lbs
Accessory: Power cord (6.6ft) × 1, Removable terminal plug (3P) × 8, Removable terminal plug (5P) × 1, CD-ROM (containing setup software) × 1

*0dB = 0.775V

Personal Computer Requirements
Requirements: CPU: Intel Pentium4, 1.0GHz or faster/ Memory: Windows XP/512MB or more, Other OS/1.0GB or more/ Display: 1024 × 768 resolution or higher/ Free hard Disk Space: 16MB or more. however 600MB or more is required for the 32-bit version or 1.5GB or more for the 64-bit version when "NET Framework" is not yet installed/ Optical Driver: CD-ROM drive/ Network Adapter: 10BASE-T or faster connection
OS: Windows XP SP3 or later, Windows Vista (32/64-bit) SP1 or later, Windows 7 (32/64-it edition)
Required Component: NET Framework 4 Client Profile

*Windows is a registered trademark or trademark of Microsoft Corporation in the United States and/or other countries.
*Pentium is a registered trademark of Intel Corporation.
*Other company names and products are also trademarks of individual companies

Digital Ambient Noise Controller

DP-L2
Digital Ambient Noise Controller

MAIN FEATURES
- Digital ambient noise control (ANC) function with 4-LED metering automatically adjusts output gain to match changes in ambient noise levels
- Exclusive TOA algorithm distinguishes unit output sound level from ambient noise levels, for more accurate control
- Monitor output for sound picked up by the ambient noise sensor microphone
- Automatic level control feature with 4-LED metering maintains input signal at a constant level by adjusting input signals to appropriate levels when the sound level is too low
- Maximum Output function acts as a limiter
- Sensor input reference level fine adjustment function
- Sensor input phantom power
- Sound volume is controlled without losing nuances of speech or compromising background music sound quality. This prevents unnatural sound effects that often results when using conventional Automatic Gain Control (AGC) or compressor.
- 8-LED input and output level metering
- Auto input sensitivity setting and sensor input reference level measurement function
- Front panel LCD screen, keys and knobs ensuring easy access to all settings
- Built-in key lock function prevents unauthorized adjustment
- 5 year warranty

Power Source: 120V AC, 50/60Hz
Power Consumption: 20W (300mA)
Frequency Response: 20 – 20,000Hz, ±1dB
Sampling Frequency: 48kHz
Dynamic Range: Over 108dB (IHF-A weighted)
Distortion: Under 0.006%, 1kHz, +4dB* input/output (20 – 20,000Hz BPF)
Input: Sensor input (Ambient noise sensor microphone input): +4/-48dB* changeable, 10kΩ, electronically-balanced, removable terminal block (4 pins), phantom power (+15V DC, can be turned on or off with Phantom switch) with +15V DC terminal
Input 1, 2: +4/-8/-20dB* changeable, 15kΩ, electronically-balanced, removable terminal block (3 pins)
Output: Monitor output:+4dB*, 600Ω, electronically-balanced, removable terminal block (3 pins)/Output 1, 2: +4dB*, 600Ω, electronically-balanced, removable terminal block (3 pins)
A/D Converter: 24 bit
D/A Converter: 24 bit
Signal Processing
Automatic Level Control Function: Level meter (4 LED meters)/ Automatic input signal level control function/Automatic input sensitivity setting function: +4/-8/-20dB*/Noise gate level setting: -99 to -3dB

Ambient Noise Control Function: Level meter (4 LED meters). BGM/Announce level control function/ Automatic sensor input reference level measuring function/ Sensor input reference level fine adjustment function/ Maximum output signal level control: -15 to 0dB/ Minimum output signal level control: -18 to -3dB/ Sample time setting: 10 s, 20 s, 30 s, 1 min, 5 min/ Gain ratio setting (Ambient noise; Output signal level) 6: 3, 5: 3, 4: 3, 3: 3, 3: 4, 3: 5, 3:6/ Ambient noise measuring frequency setting: 20Hz – 20kHz, 3 points
Maximum Output Signal Level Control Function: -12, -6, 0, +4, +6, +12, +18, +24dB*
Input Level Indicator: 8 LEDs indicator
Output Level Indicator: 8 LEDs indicator

Other Feature: Phantom power switch (sensor input), Key lock function, Ground lift switch (INPUT 1, INPUT 2), Input/Output bypass function in power off
Operating Temperature: 32°F to +104°F
Operating Humidity: Under 90% RH (no condensation)
Finish: Pre-coated steel plate, black, 30% gloss
Dimensions: 19 (W) × 1.7 (H) × 12 (D)in, EIA rack mount
Weight: 8.2lbs
Accessory: Power cord (6.6ft) × 1, Removable terminal plug (4 pins) ×1, Removable terminal plug (3 pins) × 5

*0dB = 0.775V

Network Related Systems

NX-100 - Network Audio Adapters

NEED TO GET AUDIO TO A REMOTE SITE A MILE AWAY? How about multiple locations across the country, or on another continent? Your customer already has a data network infrastructure. The world's largest communications network, the Internet, is ready and waiting. Why not use them for commercial audio distribution? Corporate messaging, wide area paging – the possibilities are limitless. TOA **NX-100 Network Audio** gives you the power to distribute bi-directional audio, contact closure and serial data over LANs, WANs or the Internet. All without eating up your bandwidth or requiring a dedicated network. There's even a built-in web server for browser-based configuration from any PC, anywhere on the network. Cost-effective, easy to setup, with proven TOA reliability.

MAIN FEATURES

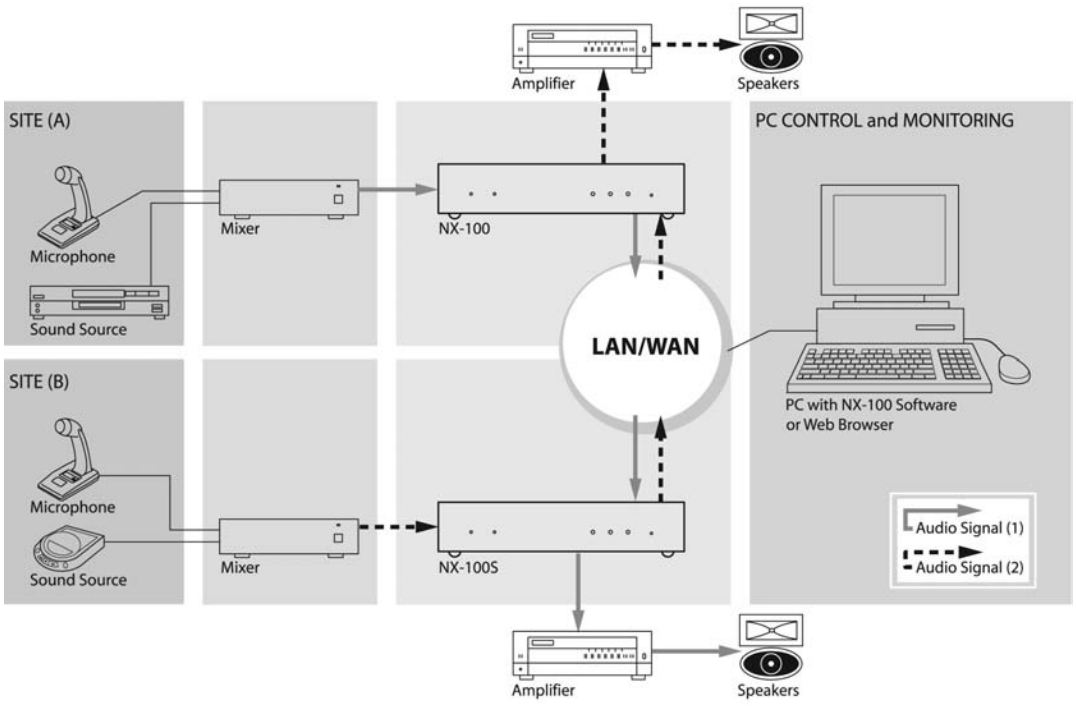
NX-100, NX-100S
AUDIO NETWORK ADAPTER

- Converts analog audio (mic or line) to standard IP format for transmission over existing local or wide area networks (LAN/WAN) including the Internet
- Bi-directional audio transport plus contact closures and serial RS-232 (NX-100 only)
- Reduces installation and operational costs when distributing audio signals to remote locations
- Balanced mic/line input with adjustable volume control
- Phantom power for condenser microphones (NX-100S only)
- Balanced line output
- Built-in Ethernet port (10/100BaseT)
- Point-to-point transmission (Unicast) of audio signals to up to four locations (LAN/WAN/Internet)
- Simultaneous transmission (Multicast) of audio signals to up to 64 locations (LAN/WAN)
- Control inputs can initiate and terminate audio transmissions without the need for dedicated PC-based or other control equipment
- Eight control inputs with adjustable contact off delay time
- Eight control outputs: open collector output
- Adjustable sample rate and audio bandwidth allows efficient use of network resources
- Minimum delay: 20 ms
- Multiple error correction modes
- Intuitive Configuration, Operating and Management software
- Browser-based software allows control and monitoring from any network-based PC
- Convenient End User features including customizable Operation software, Operation logs and password protection
- Front panel indication: Link/Active, Full-Duplex/Collision, Status, Error, Run
- Signal and Peak Indicators (NX-100S only)
- Front panel reset button
- External 24 VDC input for battery backup operation (NX-100 only)
- Easy to upgrade flash memory firmware
- Compact, half-rack size unit (1 RU)
- Requires AC power supply, model AD-246
- Optional rack-mount kits (1 RU), model MB-15B-BK (1 NX-100/NX-100S), model MB-15B-J (2 NX-100/NX-100S)
- 5 year warranty

APPLICATIONS

- Airports
- Audio Distribution to Multiple Remote Locations
- Auditoriums / Theatres
- Broadcast
- Business Music
- Business Music Distribution
- Convention Centers
- Corporate Messaging
- Educational Facilities
- Hotels
- Houses of Worship
- Industrial / Warehouses
- Remote Monitoring
- Museums
- Paging Distribution
- Performing Arts Centers
- Public Address
- Railway Stations
- Retail Chain Stores
- Sports Facilities
- Stadiums
- Theaters
- Theme Parks
- Transit Stations
- Wide Area Paging

Differences between the NX-100 and NX-100S		
	NX-100	**NX-100S**
Audio transport	Yes	Yes
Switch transport	Yes	Yes
RS-232C transport	Yes	No
Power source	AC or 24 V DC	AC only
Input signal LED	No	Yes
Input peak level LED	No	Yes
Phantom power supply	No	Yes



Network Audio Adapters

NX-100
Network Audio Adapter

Power Source: 24V DC (removable terminal block (3 pins)) or AC adapter AD-246 (optional) or the equivalent
Current Consumption: 200mA (DC operation)
Audio Input: 1 channel (transformer-isolated), -58dB* to 0dB*, balanced (MIC/LINE changeable, volume adjustable with volume control), 2kΩ, removable terminal block (3 pins)
Audio Output: 1 channel (transformer-isolated), balanced, 600Ω, removable terminal block (3 pins)
Frequency Response: 50 – 14,000Hz (when sampling frequency is 32kHz)
Distortion: Under 0.3% (1kHz, when sampling frequency is 32kHz)
Control Input: 8 channels, no-voltage make contact input, open voltage: 12V DC, short-circuit current: 10mA, removable terminal block (9 pins)
Control Output: 8 channels, open collector output, withstand voltage: 30V DC, control current: 50mA max., removable terminal block (9 pins)
Network I/F: 10BASE-T/100BASE-TX, Auto-Negotiation
Serial I/F: RS-232C (DCEI/F), D-sub connector (9P, male), 9600bps – 115200bps
Network Protocol: TCP, UDP, ARP, ICMP, HTTP, RTP, IGMP
Audio packet Transmission System: Unicast (up to 4 simultaneous transmissions), Multicast (up to 64 simultaneous transmissions)
Operating Temperature: 32°F to +122°F (32°F to +104°F when AC adapter is in use)
Operating Humidity: Under 90% RH (no dew condensation should be produced)
Finish: Steel plate, black, 30% gloss
Dimensions: 8.3 (W) × 1.8 (H) × 7.4 (D)in
Weight: 2.6lbs
Accessory: Bracket mounting screw × 8, CD (PC Installation & Operation software programs, Instruction manuals) × 1, Power supply removable terminal plug (3 pins) × 1, Audio I/O removable terminal plug (3 pins) × 2, Control I/O removable terminal plug (9 pins) × 2, RS-232C connector cover × 1
Option: Rack mounting bracket: MB-15B-BK (for rack mounting one NX-100 unit), MB-15B-J (for rack mounting two NX-100 units)/ AC adapter: AD-246

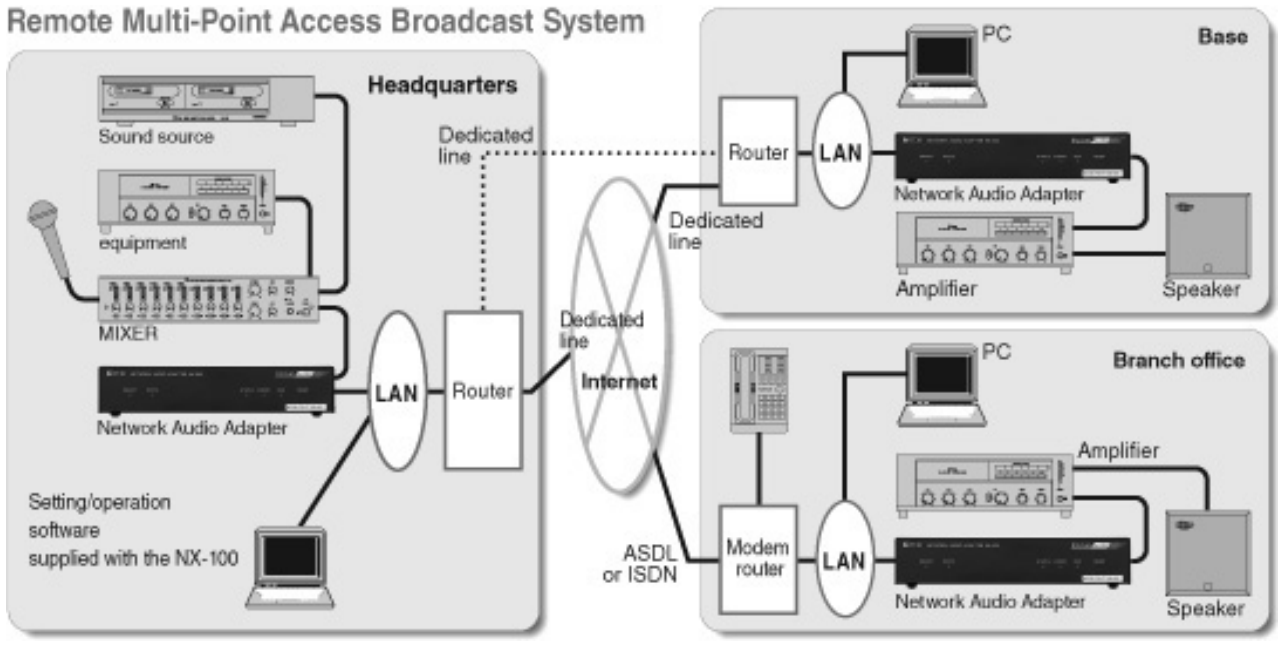
* 0dB = 1V
Note: When you need the AC adapter, be sure to consult your TOA dealer.

NX-100S
Network Audio Adapter

Power Source: AC adapter AD-246 (optional) or the equivalent
Current Consumption: 7W (when AD-246 (optional) is used)
Audio Input: 1 channel (transformer-isolated), -58dB* to 0dB*, balanced (MIC/LINE changeable, volume adjustable with volume control), 2kΩ, removable terminal block (3 pins), phantom power supply (24V, can be set with the switch)
Audio Output: 1 channel (transformer-isolated), balanced, 600Ω, removable terminal block (3 pins)
Frequency Response: 50 – 14,000Hz (when sampling frequency is 32kHz)
Distortion: Under 0.3% (1kHz, when sampling frequency is 32kHz)
Control Input: 8 channels, no-voltage make contact input, open voltage: 12V DC, short-circuit current: 10mA, removable terminal block (9 pins)
Control Output: 8 channels, open collector output, withstand voltage: 30V DC, control current: 50mA max., removable terminal block (9 pins)
Network I/F: 10BASE-T/100BASE-TX, Auto-Negotiation
Network Protocol: TCP, UDP, ARP, ICMP, HTTP, RTP, IGMP
Audio packet Transmission System: Unicast (up to 4 simultaneous transmissions), Multicast (up to 64 simultaneous transmissions)
Operating Temperature: 32°F to +104°F
Operating Humidity: Under 90% RH (no dew condensation should be produced)
Finish: Steel plate, black, 30% gloss
Dimensions: 8.3 (W) × 1.8 (H) × 7.4 (D)in
Weight: 2.6lbs
Accessory: Bracket mounting screw × 8, CD (PC Installation & Operation software programs, Instruction manuals) × 1, Audio I/O removable terminal plug (3 pins) × 2, Control I/O removable terminal plug (9 pins) × 2, Ferrite clamp × 1
Option: Rack mounting bracket: MB-15B-BK (for rack mounting one NX-100S unit), MB-15B-J (for rack mounting two NX-100S units)/AC adapter: AD-246

* 0dB = 1V
Note: When you need the AC adapter, be sure to consult your TOA dealer.

System Image



Rack Mount Equipment and Others

Program Timer

TT-104B
Program Timer

The **TT-104B** is a program timer that comes with 4 outputs and controls 4 different broadcasts. With use of an optional rack-mounting bracket, it can be mounted in an EIA Standard equipment (occupying 1 unit size).

MAIN FEATURES
TT-104B

PROGRAM TIMER
- For timed control of external equipment and events.
- Four independent outputs with thirty programmable steps per output
- Outputs feature 0.5 A (@ 24 VDC) five second dry contact closures.
- Weekly program with pause mode for vacations/ holidays.
- ±5 second per month clock accuracy with four day backup battery if power fails.
- Optional rack-mount kit, model MB-15B
- 5 year warranty

Power Source: 220 – 240V AC (301H version)/110 –120V AC (304L version) , 50/60Hz,
Power Consumption: 3W
Displayed Contents: Day of the week, hour and minute
Program Item: Day of the week, hour, minute, output channel
Number of Channels: 4 channels (A, B, C, D)
Output System: No-voltage (DRY) make contact (5-second pulse make output)
Output Capacity: 24V DC, 0.5A
Output Terminal: M4 screw terminal, distance between barriers 9mm
Program Capacity: 30 steps per channel
Clock Accuracy: ±5 sec. per month (77°F)
Power Outage Protection: 100hrs.
Operating Temperature: 32 to 122°F
Finish: Panel: Aluminum, black, 30% gloss, paint/ Case: pre-coated steel plate, black
Dimensions: 16.5 (W) × 2 (H) × 9.8 (D)in
Weight: 5.5lbs
Option: Rack-mounting bracket: MB-15B

Sound Repeater

EV-20R
Message Repeater

MAIN FEATURES
EV-20R
DIGITAL MESSAGE REPEATER
WITH USB
- Rack-mount digital message repeater
- Three minutes of CD-quality digital storage
- Four selectable messages/tones
- Built-in amplifier (3W) for direct speaker connection
- Line input pass-through
- CD-ROM tone library and USB cable included
- 5 year warranty

Power Source: Supplied from an external 24V DC/400mA power supply or from an optional AD-246 AC adapter
Power Consumption: 10W (rated output)
Wave Format: 44.1kHz sampling frequency, 16-bit PCM (monaural)
Frequency Response: 20Hz – 20kHz, ±3dB (1kHz)
50Hz – 20kHz, ±3dB (IT-450 mounted, 1kHz)
Distortion: Under 1% (1kHz, rated output)
Recording System: USB data transfer or analog recording
Control Input: Play 1 – 4, stop: No-voltage make contact input, pulse make length : 200ms, open voltage: 30V DC, short-circuit current : 10mA removable terminal block (22 pins)
Control Output: Busy: Contact capacity: 30V DC/0.5A, removable terminal block (22 pins)
Input: Input / Recording input: Mic: -60dB*, 2.2kΩ/Line: -20dB*, 10kΩ,(Mic/Line changeable), unbalanced, phone jack/Line input: 0dB*, 10kΩ, unbalanced, removable terminal block (22 pins)
Output: Line output: 0dB*, 600Ω, unbalanced, removable terminal block (22 pins)/Headphone output : 0dB*, 100Ω, unbalanced, phone jack/Speaker output : 3W, 8Ω, removable terminal block (22 pins)
LED Indicator: POWER, USB, START/STOP 1 – 4
Maximum No. of Messages: 4
Pre-recorded audio data: Message 1, Westminster chime*2/ Message 2, Ascending 4-tone chime*2/Message 3, Descending 4-tone chime*2/Message 4, None
*2 These audio sources are also contained in the supplied CD-ROM as sample audio data
Note: The above audio sources can be overwritten by using the supplied software.

Maximum Recording Time: 6 min
Messages Delay Time: 0, 2s or 4s (selectable)
Playback Interval Time: ∞, 0, 5s, 10s, 30s, 1 min, 5 min, 10 min, 30 min or 1 h (selectable)
Operating Temperature: 32°F to +104°C
Operating Humidity: Under 90% (no condensation)
Finish: Case: ABS resin, black
Dimensions: 8.3 (W) x 1.7 (H) x 7.1 (D)in (excluding projection)
Weight: 1.6lbs
Accessory: CD-ROM (USB data transfer software and sample chimes recorded) × 1, Unbalanced-phone plug × 1, USB cable (3.3ft) × 1, Terminal block type connector (22 poles) × 1, Rubber foot × 4
Option: Rack mounting bracket: MB-WT3 (for rack mounting one EV-20R unit)/MB-WT4 (for rack mounting two EV-20R units)
AC adapter: AD-246

* 0dB = 1V
*2 These audio sources are also contained in the supplied CD-ROM as sample audio data

USB Data Transfer Software Operation Environment
Personal Computer: Windows PC (equipped with the USB terminal)
Main Specifications: CPU: Pentium compatible CPU of 300MHz or faster
Memory: 128MB or more
Free disk space: 10MB or more
Optical driver: CD-ROM drive
OS: Windows XP (32-bit edition)/Vista (32-bit edition)/7 (32-bit edition)
*Pentium is a registered trademark of Intel Corporation.
*Windows is a registered trademark or trademark of Microsoft Corporation in the United States and/or other countries.
*Other company names and products are also trademarks of individual companies.
*Line input and Line output can be converted to balanced type using an optional IT-450 transformer.

Rack Mount Associated Equipment

PF-1100
Perforated Panel

- 1-unit size.

Finish: Aluminum, black
Dimensions: 19 (W) × 1.7 (H) × 0.6 (D)in
Weight: 0.3lbs
Accessory: S tight (M5 × 20) (Black) × 4

AM/FM Tuner

DT-930
Synthesized AM/FM Tuner

TOA's **DT-930 Radio Tuner** is an AM/FM Tuner designed for use as a commercial background music source, capable of receiving FM stereo broadcast and storing a total of 40 FM and AM stations. With the use of an optional rack mounting bracket, it can be mounted in an EIA Standard equipment rack (1 unit size).

MAIN FEATURES
DT-930

AM/FM SYNTHESIZED TUNER
- Presets for any combination of 40 AM (monaural) and/or FM (capable of receiving stereo broadcast) stations
- Frequency synthesized digital tuning with multi-function digital display
- Automatic station scanning and manual tuning
- Automatic station storage to memory using auto-scan mode
- Direct station frequency tuning entry
- Stereo output is available
- FM dipole and AM loop antenna included
- Optional rack mount kit available (MB-15B)
- 5 year warranty

Power Source: 120V AC, 60Hz (supplied from the AC adapter accessory)
Power Consumption: 180mA (when AC adapter (accessory) is used)
Receiving Frequency: FM: 87.9 – 107.9MHz (200kHz steps)/ AM: 520kHz – 1710kHz (10kHz steps)
Antenna Input: FM: 300Ω (balanced), 75Ω (unbalanced)/AM: Loop antenna (balanced), external antenna (unbalanced)
Audio Output: Stereo: -15dB*, 10kΩ, unbalanced, RCA jack/ Monaural: -15dB*, 10kΩ, unbalanced, M3 screw terminal, distance between barriers: 0.3in, RCA jack

Channels of Memory: 40 channels in total for AM and FM broadcasts
Operating Temperature: 32°F to +104°F
Finish: Panel: Aluminum (hair-line finish), black/ Case: Pre-coated steel plate, black
Dimensions: 16.5 (W) × 2.1 (H) × 11.6 (D)mm
Weight: 6.2lbs
Accessory: AC adapter × 1, FM antenna × 1, AM loop antenna × 1, RCA stereo cord (3.3ft) × 1
Option: Mounting bracket kit: MB-15B,

*0dB = 1V

Multi-Channel Monitors

MP-1216
Multi-Channel Monitor

The **MP-1216** signal level meter allows simultaneous monitor of 16 channels per unit. Any of the high-impedance speaker line output, low-impedance speaker line output, and line level output can be monitored by connecting it to the corresponding input. One of the 16 channels can be monitored with an internal speaker or headphone. By connecting two **MP-1216** units, a maximum of 32 channels can be monitored.

MAIN FEATURES
MP-1216

16-CHANNEL ACTIVE MONITOR PANEL
- Sixteen transformer-isolated, bridging inputs for monitoring line level or low and high impedance speaker line signals
- Separate bar graph meter for each input
- Internal speaker with selector switch for individual channel monitoring
- Two units can be linked for 32 channel monitoring using optional cable, model YA-8
- Built-in rack-mount brackets (2 RU)
- 5 year warranty

Power Source: 220 – 240V AC (H version)/120V AC (US version), 50/60Hz
Power Consumption: 21W (120V AC version), 25W (220 – 240V AC version)
Max. Display Level: Speaker(High impedance: 100V Low impedance: 1200W/ 8Ω)
Line: +10dB (2.45V)
Level Meter: 12-point display, -30dB – +6dB (0.3W – 1200W/ 8Ω)
Speaker Output: Max. 3W
Headphone Output: 8Ω
Finish: Front panel: Alumite, black
Dimensions: 19 (W) × 3.5 (H) × 12.3 (D)in
Weight: 11.7lbs
Accessories: AC fuse, 250V 1A (120V version) × 1, AC fuse, 250V 1259mA (220 – 240V version) × 1, Rack mounting screw × 4

YA-8
Connection Cable for MP-1216

- 3.3ft long
- 8P DIN plug

MP-032B
Monitor Panel

The **MP-032B** is a monitor panel that is designed to provide aural and visual monitoring for multi-channel sound and program system.

MAIN FEATURES
MP-032B

10-CHANNEL PASSIVE MONITOR PANEL
- Ten input channels for monitoring high impedance speaker lines
- VU meter
- Internal speaker with selector switch for individual channel monitoring
- Built-in rack-mount brackets (3 RU)
- 5 year warranty

Functions: Aural/Visual monitoring (up to 10 power amplifiers)
Controls: Channel selector switch
Monitor volume control
Watt meter
Line voltage selector switch
Speaker: Full-range 12cm speaker
Input Lines: 25V (625Ω), 50V (2.5kΩ), 70V (5kΩ),100V (10kΩ) switchable
Terminals: M4 screw terminals, distance between barriers: 0.3in
Finish: Surface-treated steel plate, black
Dimensions: 19 (W) × 5.2 (H) × 3.4 (D)in
Weight: 5lbs
Accessories: Rack mounting screw (with washer) × 4

Commercial Sound Speakers

Plane Wave Speakers

The TOA **Plane Wave Speaker** is a flat speaker system equipped with a plane wave unit consisting of a diaphragm, buffer, magnet, and case, enabling radiation of sound in narrow horizontal and vertical directivity patterns, delivering clear audio to a limited target area with minimal attenuation. The metal parts of the plane wave unit and the entire speaker cabinet are made of stainless steel, making the speaker rust-resistant. The plane wave feature makes the speakers well-suited for information broadcast applications in locations such as railroad stations, where different announcements are made in close proximity.

Compact Plane Wave Speakers

PW-1230DB/DW (30W)
Compact Double-Sided Radiation Type
PW-1230SB/SW (30W)
Compact Single-Sided Radiation Type

PW-1230DB/1230SB

PW-1230DW/1230SW

PW-1230DB/1230DW
Type of Radiation: Double-sided radiation
Front (The side with TOA logo affixed: Positive pressure wave, Rear: Negative pressure wave)
Rated Input: 30W
Rated Impedance: High impedance 100V line: 330Ω (30W), 670Ω (15W), 1kΩ (10W), 2kΩ (5 W)/
High impedance 70V line: 170Ω (30W), 330Ω (15W), 670Ω (7.5W), 1kΩ (5W), 2kΩ (2.5W)
Sensitivity: 86dB (1W, 1m equivalent measured at 4m, 1 – 10kHz)
86dB (1W, 1m measured at 1m, 1 – 10kHz)
(Beam tilting : FLAT, High pass filter: OFF)
Frequency Response: 300Hz – 17.5kHz
(Beam tilting : FLAT,
High pass filter: OFF)
Directivity Angle: Horizontal: 38° (2kHz, 1/3 octave band), Vertical: 75° (2kHz, 1/3 octave band)
Speaker Unit: Plane wave unit (6 × 8.4in) × 2
Setting Switch: Beam tilting (radiation direction)
FLAT: 0° downward/DOWNWARD: 5° downward
High pass filter (450Hz, -12dB/oct) : OFF/ON
Speaker Cord: 9mm, 6-core cabtyre cable, 2m
Water Protection: IPX4
Operating Temperature: 14°F to +122°F
Finish: Enclosure, Punched net and Mounting bracket: Stainless, black or light ivory, semi-gloss, paint
Dimensions: 20.6 (W) × 14 (H) × 2.4 (D)in
(including mounting bracket)
Weight: 7.3kg (including mounting bracket)

PW-1230SB/1230SW
Type of Radiation: Single-side radiation
Rated Input: 30W
Rated Impedance: High impedance 100V line: 330Ω (30W), 670Ω (15W), 1kΩ (10W), 2kΩ (5 W)/
High impedance 70V line: 170Ω (30W), 330Ω (15W), 670Ω (7.5W), 1kΩ (5W), 2kΩ (2.5W)
Sensitivity: 87dB (1W, 1m equivalent measured at 4m, 1 – 10kHz)
87dB (1W, 1m measured at 1m, 1 – 10kHz)
(Beam tilting : FLAT, High pass filter: OFF)
Frequency Response: 450Hz – 17.5kHz
(Beam tilting : FLAT, High pass filter: OFF)
Directivity Angle: Horizontal: 38° (2kHz, 1/3 octave band), Vertical: 75° (2kHz, 1/3 octave band)
Speaker Unit: Plane wave unit (6 × 8.4in) × 2
Setting Switch: Beam tilting (radiation direction)
FLAT: 0° downward/DOWNWARD: 5° downward
High pass filter (450Hz, -12dB/oct) : OFF/ON
Speaker Cord: 9mm, 6-core cabtyre cable, 2m
Water Protection: IPX4
Operating Temperature: 14°F to +122°F
Finish: Enclosure, Punched net and Mounting bracket: Stainless, black or light ivory, semi-gloss, paint
Dimensions: 20.6 (W) × 14 (H) × 2.4 (D)in
(including mounting bracket)
Weight: 7.8kg (including mounting bracket)

Large Plane Wave Speakers

PW-1430DB/DW (30W)
Large Double-Sided Radiation Type
PW-1430SB/SW (30W)
Large Single-Sided Radiation Type

PW-1430DB/1430SB

PW-1430DW/1430SW

PW-1430DB/1430DW
Type of Radiation: Double-sided radiation
Front (The side with TOA logo affixed: Positive pressure wave, Rear: Negative pressure wave)
Rated Input: 30W
Rated Impedance: High impedance 100V line: 330Ω (30W), 670Ω (15W), 1kΩ (10W), 2kΩ (5 W)/
High impedance 70V line: 170Ω (30W), 330Ω (15W), 670Ω (7.5W), 1kΩ (5W), 2kΩ (2.5W)
Sensitivity: 88dB (1W, 1m equivalent measured at 4m, 1 – 10kHz)
85dB (1W, 1m measured at 1m, 1 – 10kHz)
(Beam tilting : FLAT, High pass filter: OFF)
Frequency Response: 250Hz – 17.5kHz
(Beam tilting : FLAT,
High pass filter: OFF)
Directivity Angle: Horizontal: 19° (2kHz, 1/3 octave band), Vertical: 78° (2kHz, 1/3 octave band)
Speaker Unit: Plane wave unit (6 × 8.4in) × 4
Setting Switch: Beam tilting (radiation direction)
FLAT: 0° downward/DOWNWARD: 5° downward
High pass filter (450Hz, -12dB/oct) : OFF/ON
Speaker Cord: 9mm, 6-core cabtyre cable, 2m
Water Protection: IPX4
Operating Temperature: 14°F to +122°F
Finish: Enclosure, Punched net and Mounting bracket: Stainless, black or light ivory, semi-gloss, paint
Dimensions: 32.7 (W) × 14 (H) × 2.4 (D)mm
(including mounting bracket)
Weight: 25.1lbs (including mounting bracket)

PW-1430SB/1430SW
Type of Radiation: Single-side radiation
Rated Input: 30W
Rated Impedance: High impedance 100V line: 330Ω (30W), 670Ω (15W), 1kΩ (10W), 2kΩ (5 W)/
High impedance 70V line: 170Ω (30W), 330Ω (15W), 670Ω (7.5W), 1kΩ (5W), 2kΩ (2.5W)
Sensitivity: 90dB (1W, 1m equivalent measured at 4m, 1 – 10kHz)
87dB (1W, 1m measured at 1m, 1 – 10kHz)
Frequency Response: 400Hz – 17.5kHz
(Beam tilting : FLAT, High pass filter: OFF)
Directivity Angle: Horizontal: 38° (2kHz, 1/3 octave band), Vertical: 75° (2kHz, 1/3 octave band)
Speaker Unit: Plane wave unit (6 × 8.4in) × 4
Setting Switch: Beam tilting (radiation direction)
FLAT: 0° downward/DOWNWARD: 5° downward
High pass filter (450Hz, -12dB/oct) : OFF/ON
Speaker Cord: 9mm, 6-core cabtyre cable, 2m
Water Protection: IPX4
Operating Temperature: 14°F to +122°F
Finish: Enclosure, Punched net and Mounting bracket: Stainless, black or light ivory, semi-gloss, paint
Dimensions: 32.7 (W) × 14 (H) × 2.4 (D)mm
(including mounting bracket)
Weight: 26.2lbs (including mounting bracket)

Ceiling Speakers

Flush Mount Type Ceiling Speaker

PC-580RU/RVU

The **PC-580RU** & **PC-580RVU** are designed to fill the need for a high-performance / low-cost ceiling speaker for paging and notification applications, especially where retrofit of speakers in large facilities, dictate that common speaker template is used, eliminating the need for adapting existing ceiling cutouts. The **PC-580RU** & **PC-580RVU** (along with the HY-BC580U Back can) meet UL requirements for speakers used in emergency signaling and notification applications.

MAIN FEATURES

CEILING MOUNT SPEAKER

- 8" in-Ceiling Speaker for high-quality paging applications
- Low-cost design makes it ideal for projects requiring large quantities
- 25 & 70V transformer taps up to 5W
- Fits standard ceiling-speaker template (PC-671R and others). Perfect for retrofits.
- UL 1480 (UUMV) & UL 2043-rated. Certified to work with emergency announcement systems.
- Unique "monocoque" design provides better structural integrity.
- PC-580RVU version provides a center-grille volume adjustment potentiometer
- Optional UL-rated HY-BC580U stackable back-can for use in ceiling plenums
- Sold in quantities of 10

PC-580RU

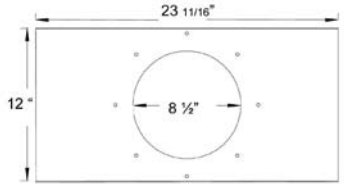
Rated Input: 10 W (speaker), 5 W (transformer, 70.7 V line and 25 V line)
Impedance: 70.7V line: 20 K (0.25 W), 10 K (0.5 W) 5 K (1 W), 2.5 K (2 W), 1 K (5 W) Ω
25V line: 2.5 K (0.25 W), 1.25 K (0.5 W) 625 K (1 W), 312.5 K (2 W), 125 K (5 W) Ω
Sensitivity: 97 dB
Frequency Response: 50 – 16.5 KHz
Speaker Component: 200 mm (8") Dual cone type
Dimensions for Fixing Hole: Dia. 8in
Magnet Size: Dia.3.15 K × dia.1.26 × 0.47 in
Magnet Weight: 272 g
Flux Density: 11,900 gauss
Finish: Baffle : Steel plate, white; Grille : Surface-treated steel plate net, white
Dimensions: Dia. 12.8 × 3.4 (d) in
Weight: 3.31 lbs
Accessory: Mounting screw (M 5 x 38 mm) x4; Wire nut x2

PC-580RVU

Rated Input: 10 W (speaker), 5 W (transformer, 70.7 V line and 25 V line)
Impedance: 70.7V line: 20 K (0.25 W), 10 K (0.5 W) 5 K (1 W), 2.5 K (2 W), 1 K (5 W) Ω
25V line: 2.5 K (0.25 W), 1.25 K (0.5 W) 625 K (1 W), 312.5 K (2 W), 125 K (5 W) Ω
Sensitivity: 97 dB
Frequency Response: 50 – 16.5 KHz
Speaker Component: 200 mm (8") Dual cone type
Dimensions for Fixing Hole: Dia. 8in
Magnet Size: Dia. 3.15 K × dia. 1.26 × 0.47 in
Magnet Weight: 272 g
Flux Density: 11,900 gauss
Potentiometer: Type : Screw-driver adjust
Wire wound,resistance 50Ω
Finish: Baffle : Steel plate, white; Grille : Surface-treated steel plate net, white
Dimensions: Dia. 12.8 × 3.9 (d) in
Weight: 3.35 lbs
Accessory: Mounting screw (M 5 x 38 mm) x4; Wire nut x2

Optional Accessories

HY-BC580U
Back Can



TBF-100

Splashproof & Clean Room Ceiling Speakers

PC-3CL (3W)
(For Clean Rooms & Steam Sauna Rooms)

MAIN FEATURES

PC-3CL
SPLASH-RESISTANT SPEAKER

- For humid and/or high temperature applications
- 3.5" full-range cone driver
- 1.5 and .5 W taps
- Sensitivity: 87 dB (1 W / 1 m)
- Frequency response: 150 – 20k Hz
- Temperature range: -4° F to +140° F
- 5 year warranty

MAIN FEATURES

PC-5CL
CLEANROOM SPEAKER

- For clean rooms, hospitals and laboratory applications
- 3.5" full-range cone driver
- 2.5 W tap
- Sensitivity: 87 dB (1 W / 1 m)
- Frequency response: 150 – 20k Hz
- Temperature range: -4° F to +131° F
- 5 year warranty

PC-5CL
(For Clean Rooms)

	PC-3CL	PC-5CL
Dust Particle Prevention	--	No dust particle is produced by the method set out in JIS B-9926
Enclosure	--	Completely sealed type
Speaker Unit	--	3" (8cm) dynamic speaker (vibration section: high molecular substance)
Rated Power	70.7V line: 1.5W (3.3 kΩ), 0.5W (10kΩ)	70.7V line: 2.5W (2kΩ)
Sound Pressure Level	87 dB (1W, 1m)	
Frequency Response	150 - 20,000 Hz	
Ambient Temperature	-4° F to +140° F	-4° F to +131° F
Finish	Panel: Alloy-coated ABS resin; Enclosure: ABS resin, off-white; Punching Net: Stainless steel (SUS 304); Exposure fixing screw: Stainless steel (SUS304)	
Dimensions	5.47" x 4.11" (D) 139 x 104.5 (D) mm	4.57" x 4.33" (D) 116 x 110 (D) mm
Dimensions for Fixing Holes	3.94" (100mm)	3.86" (98mm)
Weight	1.21lbs (550g)	1.37 (620g)
Accessories	Fixing gasket x 1, Ceiling mounting screws (material: stainless steel) x 4	

Box Speakers

Wall Mount Box Speakers

BS-680FC (6W)

TOA's **BS-680FC** speakers have a strong, all-metal body, and are ideally suited for emergency broadcasting (voice alarm system) applications. The 6" (16cm) double cone speaker unit ensures high-quality sound. They can be quickly and easily installed in either a horizontal or a vertical orientation. Either concealed in-wall wiring or exposed wiring can be used for speaker cable connection. The **BS-680FC** provides two ceramic screw terminal blocks (1 cable to 1 connection type) allow bridge connection. The selectable input impedance can be easily adjusted by changing the top position of the unit's transformer. Both surface and in-wall mounting are possible. The innovative structural design permits direct wall stud installation with screws.

MAIN FEATURES
BS-680FC
PUBLIC ADDRESS SPEAKER
- Quick and easy installation
- Strong all-metal body
- Horizontal / vertical installation
- Surface / in-wall mounting
- Ideally suited for emergency broadcasting applications
- Built-in thermal fuse for additional protection
- Fire resistant wiring
- Color: off-white
- 5 year warranty

MAIN FEATURES
BS-678
PUBLIC ADDRESS SPEAKERS
- Stylish, compact and unobtrusive design
- Packaged two speakers per box
- Quick and easy installation
- High cost-effectiveness
- Horizontal or vertical installation
- Ideally suited for background music and announcements
- Finish color: off white
- 5 year warranty

BS-678 (6W)

The **BS-678** is a double-cone type speaker with a wooden cabinet that has a stylish, compact and unobtrusive design that delivers highly cost-effective performance.

A push-in type input connector allows easy cable connections and bridge wiring. The selectable input impedance can be easily adjusted by changing the tap position of the unit's transformer. The 6" (16cm) double cone speaker unit ensures high-quality sound, making the **BS-678** ideal for BGM (background music) and announcement applications.

The **BS-678** can be installed in either a horizontal or a vertical orientation. Its structure permits direct wall stud installation with the supplied tapping screws. The **BS-678** is sold and ships as a boxed pair and are priced individually.

	BS-678	BS-680FC
Rated Input	6 W (100 V line), 3 W (70 V line)	
Rated Impedance	100 V line: 1.7 kΩ (6 W), 3.3 kΩ (3 W), 6.7 kΩ (1.5 W), 13 kΩ (0.8 W) 70 V line: 1.7 kΩ (3 W), 3.3 kΩ (1.5 W), 6.7 kΩ (0.8 W), 13 kΩ (0.4 W)	
Sensitivity	94 dB (1 W, 1 m) (500 - 5,000 Hz, pink noise)	
Frequency Response	150 - 20,000 Hz (peak -20 dB)	
Speaker Component	6" (16cm) double cone-type	
Standard	--	In compliance with the US Standard NFPA72 or Birtish Standard BS 5839-8:1998
Applicable Cable	600 V vinyl-insulated cable (IV wire or HIV wire) Solid wire: 0.03" - 0.06"/0.8 - 1.6 mm (equivalent to AWG 20 - 14) 7-core twisted wire: 0.03" - 0.05" / 0.75 - 1.25 mm (equivalent to AWG 18 - 16)	600 V vinyl-insulated cable (IV wire or HIV wire) Solid wire: 0.1" / 3 mm (equivalent to AWG 9)
Connection	Push-in connector (bridging terminal)	Screw connector (ceramic terminal × 2) bridging allowable
Finish	Baffle: HIPS, off-white (RAL 9010 or equivalent color) Cabinet: Particle board with pvc sheet, off-white (RAL 9010 or equivalent color) Grille: Surface-treated steel plate net, off-white (RAL 9010 or equivalent color)	Baffle, Cabinet: Steel plate, off-white (RAL 9010 or equivalent color) Grille: Surface-treated steel plate net, off-white (RAL 9010 or equivalent color)
Dimensions	9.84" (W) × 7.48" (H) × 4.33" (D) / 250 (W) × 190 (H) × 110 (D) mm	12.2" (W) × 7.48" (H) × 3.43" (D) / 310 (W) × 190 (H) × 87.2 (D) mm
Weight	3.75lbs (1.7kg)	6.61lbs (3kg)
Accessory	Speaker mounting screw (0.16" × 1.38" [4 × 35mm]) x 2	Rubber grommet x 2, Speaker mounting screw (0.16" × 0.63" [4 × 16mm]) x 4

BS-1034 (10W)
BS-1034S (10W)

BS-1034S

The **BS-1034 & BS-1034S** are wall-mount, low profile, speakers matched with a supplied slide-in and locking meeting plate, for easy installation. The 10W rated input **BS-1034/BS-1034S** combine a low-frequency 5" (12cm) cone-type speaker and a high-frequency balanced dome-type speaker. An M4 screw terminal input connector allows easy connections. The speakers are driven on a high-impedance (100V or 70V) line, with rated inputs. A low profile blends in well with the room décor. Both vertical and horizontal installations are possible.

MAIN FEATURES
WALL MOUNT SPEAKERS
- Innovative speaker design
- Low profile
- Easy and quick installation
- Ideally suited for BGM and announcements
- 5 year warranty

BS-1034
Rated Input: 10W
Impedance: 100V line: 1kΩ (10W), 2kΩ (5W), 3.3kΩ (3W), 10kΩ (1W)/
70V line: 500Ω (10W),1kΩ (5W), 2kΩ (2.5W),3.3kΩ (1.5W), 10kΩ (0.5W)
Sensitivity (1W, 1m): 90 dB
Frequency Response: 120Hz – 20kHz
Speaker Component: Low frequency: 12cm (5") cone-type
High frequency: Balanced dome-type
Input Terminal: M4 screw terminal, distance between barriers: 11mm
Finish: Enclosure: HIPS resin (fire resistant grade UL94 V-0 or its equivalent), off-white (RAL 9010 or equivalent color)/
Net: Surface-treated steel plate net, off-white (RAL 9010 or equivalent color), paint
Dimensions: 8.3 (W) × 13 (H) × 3.1 (D)in
Weight: 3.1lbs
Accessory: Speaker receptacle × 1, Wall mounting screw × 2

BS-1034S
Rated Input: 10W
Impedance: 100V line: 1kΩs (10W), 2kΩ (5W), 3.3kΩ (3W), 10kΩ (1W)/
70V line: 500Ω (10W),1kΩ (5W), 2kΩ (2.5W),3.3kΩ (1.5W), 10kΩ (0.5W)
Sensitivity (1W, 1m): 90 dB
Frequency Response: 120Hz – 20kHz
Speaker Component: Low frequency: 12cm (5") cone-type
High frequency: Balanced dome-type
Input Terminal: M4 screw terminal, distance between barriers: 11mm
Finish: Enclosure: HIPS resin (fire resistant grade UL94 V-0 or its equivalent), silver/
Net: Steel plate, silver, paint
Dimensions: 8.3 (W) × 13 (H) × 3.1 (D)in
Weight: 3.1lbs
Accessory: Speaker receptacle × 1, Wall mounting screw × 2

Universal Speakers

BS-1030B
BS-1030W
(30W)

TOA's **BS-1030B/W** are small, compact, 2-way bass-reflex type speaker featuring a wide frequency range suitable for announcements and music playback. The **BS-1030B/W** can be used for both high-impedance and low-impedance applications. The speaker's splash-proof construction permits it to be installed under eaves where the speaker is not directly exposed to rain.

MAIN FEATURES
MUSIC/PAGING SPEAKERS
- 5" cone woofer and 1" dome tweeter
- Paintable steel mesh grille
- Available in black (BS-1030B) and white (BS-1030W)
- Horizontal or vertical mounting with rotatable logo
- Mounting bracket included
- 5 year warranty

Enclosure: 2-way bass reflex type
Rated Input: 30W
Impedance: 8Ω/
100V line; 330Ω (30W), 500Ω (20W), 670Ω (15W), 1kΩ (10W), 2kΩ (5W)/
70V line; 170Ω (30W), 250Ω (20W), 330Ω (15W), 500Ω (10W), 1kΩ (5W)
Sensitivity (1W, 1m): 90dB
Frequency Response: 80Hz – 20kHz
Speaker Components: 12 cm dynamic cone-type + dome-type
Speaker Cable : 2-core cabtyre cord (diameter 6mm)
Operating Temperature: 14°F to +122°F
Dust/Water Protection: IPX4 (installed vertically or horizontally*)
Finish: **BS-1030B:** Enclosure: ABS resin, black (RAL9011 GRAPHITE BLACK), paint/
Net: Surface treated steel plate, black (RAL9011 GRAPHITE BLACK), powder coating/
Bracket: surface treated steel plate, black (RAL9011 GRAPHITE BLACK), powder coating

BS-1030W: Enclosure: ABS resin, white (RAL9011 GRAPHITE BLACK), paint/
Net: Surface treated steel plate, white, powder coating/
Bracket: surface treated steel plate, white, powder coating
Dimensions: 7.7 (W) × 11.4 (H) × 5.9 (D) in (unit only)
Weight: 5.5lbs (Unit only)
Accessory: Bracket × 1, Bracket mounting screw × 2, Bracket mounting washer × 2
Option: Applicable bracket: **BS-1030B:** WB-13B, SP-410
BS-1030W: WB-13W, SP-410, SP-420

* Install with the front grille facing downward. Note that the splash-proof capability will be lost it installed face-up. The logo mark needs to be located in the lower section when the speaker is installed vertically, and on the right side of the speaker (as viewed from the front) when installed horizontally.

Horn Speakers

Combination Type Reflex Horn Speakers

SC Series

TOA **SC Series Paging Horn Speakers** provide intelligible voice paging and tone signaling for indoor and outdoor sound system applications. Fully weather-resistant (Ip-65 rated) for reliable operation in demanding environmental conditions, **SC Series** models are available with a choice of power ratings from 15 W to 30 W and a built-in 25 V / 70.7 V transformer with external screwdriver-adjustable power taps. The **SC Series** are easy to install in wall, pole or ceiling-mount applications and include corrosion-resistant stainless-steel mounting hardware. The **SC Series** models are also designed for intercom talk-back applications requiring dual operation as both a microphone and speaker. Each model is a double re-entrant horn with compression driver for high sensitivity and a lightweight aluminum enclosure. The loud-speaker diaphragm is heat and moisture-resistant to prevent deformation and extend operation. The **SC Series** Paging Horn Speakers are backed with a five year warranty.

MAIN FEATURES

PAGING HORN SPEAKERS

- Paging horn speakers for voice and tone signaling distribution
- Weather-resistant for demanding environmental conditions
- Double re-entrant horn with compression driver
- Usable as a microphone for intercom talk-back applications
- Built-in 25/70.7 V transformer (“T” models) with 8Ω and 16Ω models available
- Screwdriver-adjustable power taps
- Lightweight, sealed, aluminum enclosure
- Cable strain-relief
- Phenolic loudspeaker diaphragm prevents deformation
- Stainless-steel mounting bracket included
- 5 year warranty

SC-610 (10W)

SC-615 (15W)

SC-610T (10W)

SC-615T (15W)

SC-630 (30W)

SC-630T (30W)

SC-651 (50W)

	SC-610	SC-610T	SC-615	SC-615T	SC-630	SC-630T	SC-651
Rated Input	10W, 8Ω	10W, w/ transformer	15 W (Mobile Mount use: 10 W)	15 W	30 W (Mobile Mount use: 15 W)	30 W	50 W (Mobile Mount use: 30 W)
Line Voltage	--	--	--	70 V line or 25 V Line	--	70 V line or 25 V Line	--
Rated Impedance	8 Ω	70.7V line: 10W (500 Ω), 5W (1Ω), 2.5W (2 Ω) 25V line: 10W (63 Ω), 5W (130 Ω), 1.3W (500 Ω), .6W (1kΩ), .3W (2kΩ)	8 Ω	70V line: 15W (330Ω), 7.5W (650Ω), 3.8W (1.3Ω) 25V line: 15W (42Ω), 7.5W (83Ω), 1.9W (330Ω), 1W (650Ω), 0.5W (1.3kΩ)	8 Ω	70V line: 30W (170Ω), 15W (330Ω), 7.5W (650Ω) 25V line: 30W (21Ω), 15W (42Ω), 3.7W (170Ω), 1.9W (330Ω), 1W (650Ω)	16 Ω
Sound Pressure Level	110 dB SPL		112 dB (1 W, 1 m at 500 to 2,500 Hz peak level)		113 dB (1 W, 1 m at 500 to 2,500 Hz peak level)		--
Sensitivity	-24 dB at 1kHz		--				109 dB (1 W, 1 m)
Frequency Response	315 Hz- 12.5 kHz		280 - 12,500 Hz		250 - 10,000 Hz		250 - 6,000 Hz
Sensitivity when used as Microphone 2 (0 dB=1 mW/10 dynes/cm)	-24 dB at 1 kHz		-22 dB at 1 kHz		-20 dB at 1 kHz		--
IP Code	IP 65						
Polarity	Hot: Black , Com: White						
Operating Temperature	-20°C to +55°C (must be free from dew condensation)						
Finish	Horn flare: Aluminum, off-white, powder coating, Reflector horn and rear cover: ABS resin, off-white, Bracket, screws and bolts: Stainless steel , Speaker cable: Polyvinyl chloride insulated cabtyre cable (0.2" / 6mm in diameter, 24" / 600mm in length)						
Dimensions	6.77" (W) x 6.34" (H) x 7.40" (D) 172 (W) x 161 (H) x 188 (D) mm		8.7" (W) x 7" (H) x 9.2" (D) 222 (W) × 179 (H) × 234 (D) mm		11.2" (W) x 9" (H) x 11" (D) 285 (W) × 227 (H) × 277 (D) mm		16.93" (W) × 11.71" (H) × 12.87" (D) 430 (W) × 297.5 (H) × 327 (D) mm
Weight	1.8lbs (0.8kg)	2.4lbs (1.1kg)	2.4lbs (1.1kg)	2.9lbs (1.3kg)	3.7lbs (1.7kg)	4.4 (2kg)	7.5lbs (3.4kg)
Option	Swivel bracket: YS-151S (Can be used instead of the supplied bracket.)						--

Note: Avoid installing the speaker in locations which vibrate considerably, or under environments easy to be oil-contaminated.

Optional Accessories

SP-131
Pole Mount Bracket

- For SC-610/610T/615/615T/ SC-630/630T
- Load Capacity: 11lbs
- 2 unit in set

YS-60B
Pole Band

- Applicable Pole: Approx. 3.5 – 13.4in

Wide Range Horn Speakers (Weatherproof)

TOA **CS Series Wide-Range Paging Speakers** are ideal for indoor and outdoor commercial sound system applications for voice paging, background music and tone signaling distribution. Compared to traditional metal paging horns, **CS Series** speakers offer wider frequency range and superior sound quality. Each includes a built-in 70.7V/100 V transformer with screwdriver-adjustable power taps. All **CS** models are fully weather-resistant (IP-65 rated) to withstand demanding environmental conditions with a sealed enclosure, full-range moisture-resistant cone speaker, stainless-steel mounting hardware and a protective mesh grille. The enclosure is also coated with polyurethane resin paint to resist the fading effects of prolonged exposure to ultraviolet light. The **CS Series** Wide-Range Paging Speakers are backed with a five year warranty.

CS-64 (6W)

CS-154 (15W)

CS-304 (30W)

	CS-64	CS-154	CS-304
Rated Input	6 W	15 W	30 W
Rated Impedance	100V line: 6W (1.7kΩ), 3W (3.3kΩ), 1W (10kΩ) 70V line: 6W (830Ω), 3W (1.7kΩ), 1.5W (3.3kΩ), 0.5W (10kΩ)	100V line: 15W (670Ω), 10W (1kΩ), 5W (2kΩ) 70V line: 15W (330Ω), 7.5W (670Ω), 5W (1kΩ), 2.5W (2kΩ)	100V line: 30W (330Ω), 20W (500Ω), 10W (1kΩ) 70V line: 30W (170Ω), 15W (330Ω), 10W (500Ω), 5W (1kΩ)
Sensitivity	96 dB (1 W, 1 m)	97 dB (1 W, 1 m)	98 dB (1 W, 1 m)
Frequency Response	130 - 13,000 Hz	150 - 15,000 Hz	120 - 15,000 Hz
Speaker Component	5" (12 cm) cone-type (treated for splash proof)	5" (12 cm) cone-type	
Horizontal Directivity	--	Constant directivity horn 90° (±45° horizontal from front axis) 93 dB or more (1 W)	
Speaker Cord	2-core cabtyre cord with diameter of 0.23" (6mm)		
Temperature Range	-20°C to +55°C		
Dust/Water Protection	--	IP-65	
Finish	Horn, cover: ABS resin, off-white, paint Bracket: Stainless steel Punched net: Surface treated steel plate, dark-gray, powder coating Screw: Stainless steel	Horn, cover: ABS resin, off-white, paint Bracket: Stainless steel Net: Aluminum, gray, paint Screw: Stainless steel	
Dimensions	9.2" (W) x 8.8" (H) x 8.2" (D) 233 (W) × 224 (H) × 208 (D) mm	14.4" (W) x 9.1" (H) x 10.7" (D) 366 (W) × 230 (H) × 272 (D) mm	14.4" (W) x 9.1" (H) x 10.7" (D) 366 (W) × 230 (H) × 272 (D) mm
Weight	3.3lbs (1.5kg)	6.2lbs (2.8kg)	6.8lbs (3.1kg)

*2 Do not install the speaker face-up from a horizontal plane nor in such a way that the paper cone is exposed to direct sunlight.
If water accumulates on the paper cone, or ultraviolet rays are radiated on it, this may cause the paper cone to deteriorate, leading to speaker malfunction.

Optional Accessories

SP-131
Pole Mount Bracket

- Load Capacity: 11lbs
- 2 unit in set

YS-60B
Pole Band

- Applicable Pole:
  Approx. 3.5 – 13.4in

Interior Design Speakers

Pendant Speakers

Projection Speaker

PE-304 (30W)
Q-PE-304BK

TOA's **PE (Pendant) and PJ (Projection) Series Speakers** are ceiling/wall speakers designed for ceiling suspension installations. Considered in architectural design, these speakers can blend in with lighting equipment. A directly-attached 16.4ft (5m) (PE only) cable allows the speaker to be suspended from high ceilings. These speakers are driven either by high-impedance (100 V and 70 V) or both high-impedance and low-impedance (8 Ω) lines. The screw driver adjustable power tap can be easily changed on the back of the speaker. The speaker may be painted to meet a wide range of design needs.

MAIN FEATURES
PE-304/Q-PE-304BK (COAXIAL)
PENDANT PUBLIC ADDRESS SPEAKERS
- Stylish and outstanding design inspired by the finest lighting fixtures
- Sturdy cable extendable up to 16.4 feet (5 meters)
- Coaxial design with 5" (12cm) cone-type + balanced dome-tweeter
- Paintable enclosure and grille
- Input impedance easily changeable
- Ideally suited for background music (BGM) and announcements
- Color: off-white or black
- 5 year warranty

PJ-304 (30W)

MAIN FEATURES
PJ-304 (COAXIAL)
PROJECTION PUBLIC ADDRESS SPEAKERS
- Stylish and outstanding design inspired by the finest lighting fixtures
- Flexible speaker direction adjustment with accessory brackets
- Coaxial design with 5" (12cm) cone-type + balanced dome-tweeter
- Paintable enclosure and grille
- Input impedance easily changeable
- Ideally suited for background music (BGM) and announcements
- Color: off-white
- 5 year warranty

	PE-304/Q-PE-304BK	PJ-304
Enclosure	Bass-reflex type	
Rated Input	30W (100 V, 70 V line, 8Ω)	30W (100 V, 70 V line, 8Ω)
Rated Impedance	100 V line: 30W (330Ω), 20W (500Ω), 15W (670Ω), 10W (1kΩ), 5W (2kΩ) 70 V line: 30W (170Ω), 20W (250Ω), 15W (330Ω), 10W (500Ω), 5W (1kΩ), 8Ω	100 V line: 30W (330Ω), 20W (500Ω), 15W (670Ω), 10W (1kΩ), 5W (2kΩ) 70 V line: 30W (170Ω), 20W (250Ω), 15W (330Ω), 10W (500Ω), 5W (1kΩ), 8Ω
Sensitivity	91 dB (1 W, 1 m) (500 - 5,000 Hz, pink noise)	91 dB (1 W, 1 m) (500 - 5,000 Hz, pink noise)
Frequency Response	70 - 20,000 Hz (peak -20 dB)	70 - 20,000 Hz (peak -20 dB)
Speaker Component	5" (12cm) cone-type + balanced dome-tweeter	5" (12cm) cone-type + balanced dome-tweeter
Speaker Cord	2-core cabtyre cord 16.4 ft (5m)	2-core cabtyre cord 1.97 ft (60cm) with diameter of 0.24" (6mm)
Applicable Cable	600 V vinyl-insulated cable (IV wire or HIV wire), Solid copper wire: 0.03" - 0.06" (0.8 - 1.6mm) (equivalent to AWG 20 - 14), 7-core twisted copper wire: 0.03" - 0.05" (0.75 - 1.25mm) (equivalent to AWG 18 - 16)	--
Connection	Push-in connector (bridging terminal-2 branch type)	--
Finish	Enclosure: HIPS resin, off-white (RAL 9010 or equivalent color) or black Grille: Surface-treated steel plate net, off-white (RAL 9010 or equivalent color) or black, paintable	Enclosure: HIPS resin, off-white (RAL 9010 or equivalent color) Grille: Surface-treated steel plate net, off-white (RAL 9010 or equivalent color), paintable
Dimensions	7.32" × 9.88" (H) 186 × 251 (H) mm Push-in connector (bridging terminal-2 branch type) (unit only)	7.32" × 14.33" (H) 186 × 369 (H) mm
Weight	4.63lbs (2.1kg) (unit only)	4.63lbs (2.1kg) (unit only)
Accessory	Ceiling bracket x 1, Mounting hanger x 1, Ceiling cover x 1, Speaker mounting screw (4 × 16) x 4	Swivel bracket x 1, Speaker mounting screw (4 × 16) x 3

Others

Impedance Meter

ZM-104A
Impedance Meter

The **ZM-104A Impedance Meter** can measure the impedance of speaker lines easily in the same manner as a circuit tester measures resistance.

MAIN FEATURES
- Measures impedance of speaker lines up to 100k ohms
- Batteries: four (AA) (not included)
- Zero adjustment for accuracy on all ranges
- Easy to read meter calibrates directly in ohms
- Includes carrying case, test leads and impedance to power reference chart
- 5 year warranty

	ZM-104A
Power Source	R6 × 4 (1.5 V DC x 4)
Current Consumption	39 mA
Reading	Direct reading meter, unit: Ω
Measurement Range	× 1 range: 5 Ω - 1 kΩ × 10 range: 50 Ω - 10 kΩ × 100 range: 500 Ω - 100 kΩ
Accuracy	±10%
Oscillation Frequency	1 kHz, ±10%
Battery Life When Continuously Used	× 1 range: 30 h × 10 range and × 100 range: 60 h
Operating Temperature	-5°C - 40°C (23°F - 104°F)
Dimensions	4.72” (W) × 8.66” (H) × 2.48” (D) 120 (W) × 220 (H) × 63 (D) mm (carrying case) 4.33” (W) × 7.09” (H) × 2.28” (D) 110 (W) × 180 (H) × 58 (D) mm (unit only)
Finish	ABS resin, black
Weight	1.54lbs (700g) (including carrying case, without batteries)
Accessory	Test leads x 1 set
Measurement Category	CATI

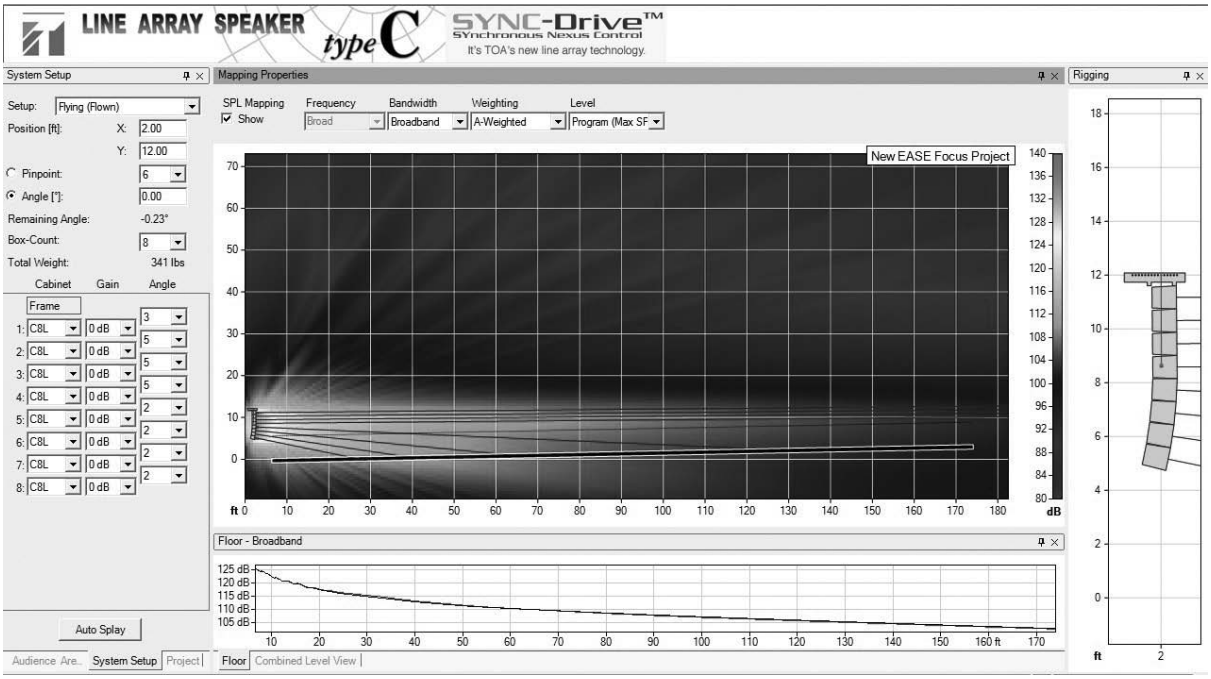
EASE Focus

Generic Aiming and Acoustic Modeling Software

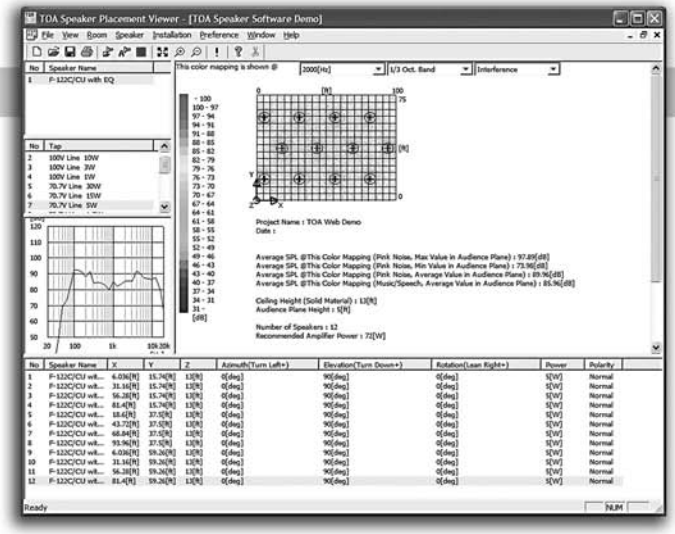
EASE Focus is a software that allows the modeling of acoustic sources, in particular line arrays, in two dimensions. It considers the direct field created by the complex addition of the sound contributions of the individual loudspeakers or array elements. Based on an intuitive and consistent interface, the design of EASE Focus is targeted at the end user, but also at the R&D engineer.

MAIN FEATURES

- Aiming and color mapping display
  - Zoomed rigging display
  - Extended report for printing
  - Levels over audience areas
  - COM and tilt angle calculation for multiple selected pinpoint
- Presets for audience areas and array setup
- English and German language version
- Acoustic calculation
  - SPL in 1/3rd octave, octave, 3 octaves, broadband
  - RMS, program and peak levels
  - Flat and A-weighted levels
  - Air attenuation according to ISO 9613
  - Complex modeling of cabinets with multiple sources per cabinet
  - Amplitude shading
  - Optimized SPL calculation routines for interactive aiming



TOA Speaker Software (SPV)



Free download at: www.toaelectronics.com
Design distributed ceiling or wall-mount speaker systems in minutes!

The newest version of the **TOA Speaker System Software** is available with added features and more data files for all of your favorite TOA ceiling and wall-mount speakers. And, best of all, it's FREE!

Features

- Easy to Use — design and layout systems in minutes!
- Automatic or Manual Layout Modes
- Color Display of Sound Pressure Level with adjustable resolution
- Interactive Frequency Response Display — changes in real-time as you move the mouse through the coverage area
- Updated Speaker Database includes most TOA models plus generic 4", 5" and 8" ceiling speakers
- Rectangular or Hexagonal Layout Patterns — Maximum Overlap, Minimum Overlap and Edge-to-Edge
- Adjust Individual Speakers — location, power and placement angles
- Minimum, Maximum and Average SPL Display for both pink noise and music/speech
- Selectable Frequency Centers — 1/12, 1/6, 1/3, 1, 2 and 4th octave
- Print Function includes color plots and speaker locations with Print Preview
- Recommended amplifier power calculation
- Energy or interference modes
- Normal or reverse polarity for individual speakers
- Metric or imperial units
- Zoom in/out and fit modes
- Distance between columns/rows

Pro-Sound Speakers

Line Array Speaker Systems

TOA SYNC-Drive™ Technology

* SYNC-Drive™ is the technology of TOA's wave-front control.

Type A Series

TOA SYNC-Drive™ Technology

SR-A12L/SR-A12LWP
Line Array Speaker System

SR-A12S/SR-A12SWP
Line Array Speaker System

TOA's **Type A Full Size, Two-Way Line Array Speakers** feature a linear wave front control technology that creates sound fields with uniform sound pressure and high sound clarity. The **SR-A12L** and **SR-A12S** are two-way line array speakers ideal for long (**SR-A12L**) or short (**SR-A12S**) distance sound transmission. The **SR-A** Series can utilize bi-amplification methods for improved frequency tuning and is complimented by using the optional **D-901** or **D-2008 Digital Signal Processors**.

MAIN FEATURES

TYPE A, FULL SIZE, TWO-WAY LINE ARRAY SPEAKERS

- Designed for wide bandwidth response
- Compact and powerful 2-way modular speaker units used in multiple configurations as required to deliver greater output power with a more extended frequency response
- High-performance driver units
- Each Type A Series speaker module contains a 30cm (12") low frequency unit and a high-frequency horn attached to two compression drivers for greater output
- Wavefront control throat function to obtain the best possible performance from the high frequency drivers
- Two speaker configurations designed for specific sound coverage,each having a different taper:
  - 5-degree taper optimized for excellent long range coverage
  - 15-degree taper optimized for excellent short range coverage
- Simple maintenance and servicing for permanent installations
- All driver replacement is possible from the speaker's rear, a simple and speedy procedure
- SR-A12L long-throw enclosure (5°V x 90°H); SR-A12S short-throw enclosure (15°V x 90°H)
- Dual compression drivers and 12" low frequency driver
- Weather-resistant versions available (SR-A12LWP / SR-A12SWP)
- Optional mounting hardware and 70.7 V transformer
- Optional subwoofer SR-A18B
- 5 year warranty

	SR-A12L	SR-A12LWP	SR-A12S	SR-A12SWP
Enclosure	Bass-reflex type			
Power Handling Capacity	Continuous program Low frequency: 450 W, High frequency: 180 W			
Rated Impedance	Low frequency: 8 Ω, High frequency: 16 Ω			
Sensitivity	Low frequency: 98 dB (1 W, 1 m) High frequency: 110 dB (1 W, 1m)		Low frequency: 98 dB (1 W, 1 m) High frequency: 109 dB (1 W, 1m)	
Frequency Response	50 - 20,000 Hz (when using an optional DSP processor)			
Crossover Frequency	1,000 Hz (when using an optional DSP processor)			
Directivity Angle	Horizontal: 90°, Vertical: 5°		Horizontal: 90°, Vertical: 15°	
Speaker Component	Low frequency: 12" (30cm) cone-type High frequency: Wave front control horn 90° (horizontal) × 5° (vertical) + compression driver × 2		Low frequency: 12" (30cm) cone-type High frequency: Wave front control horn 90° (horizontal) × 15° (vertical) + compression driver × 2	
Connected Cable	--	Direct cable withdrawal from internal speaker: 0.34" (8.6mm), conductor cross section: 0.05" (1.25mm), 4-core cable, 9.84 ft (3m)	--	Direct cable withdrawal from internal speaker: 0.34" (8.6mm), conductor cross section: 0.05" (1.25mm), 4-core cable, 9.84 ft (3m)
Operating Temperature	--	-10°C to +50°C	--	-10°C to +50°C
Water Protection	--	IPX4	--	IPX4
Input Connector	M5 screw terminal, distance between barriers: 0.48" (12.2mm) and Neutrik NL4MP × 2			
Finish	Enclosure: Plywood, black, paint; Front grille: Punched steel plate, black, acrylic paint	Enclosure: Plywood, black, urethane coating; Front grille: Punched stainless steel (SUS304), black, paint	Enclosure: Plywood, black, paint; Front grille: Punched steel plate, black, acrylic paint	Enclosure: Plywood, black, urethane coating; Front grille: Punched stainless steel (SUS304), black, paint
Dimensions	29.1" (W) x 17" (H) x 18.5" (W) 740 (W) × 433 (H) × 469 (D) mm	29.1" (W) x 17" (H) x 18.5" (W) 740 (W) × 433 (H) × 469 (D) mm (excluding connected cable)	29.1" (W) x 17" (H) x 18.4" (W) 740 (W) × 433 (H) × 467 (D) mm	29.1" (W) x 17" (H) x 18.4" (W) 740 (W) × 433 (H) × 467 (D) mm (excluding connected cable)
Weight	108lbs (49kg) (including accessories)	112lbs (51kg) (including accessories)	104lbs (47kg) (including accessories)	106lbs (48kg) (including accessories)
Accessory	Joint plate x 2, Joint plate mounting bolt (M10) x 16			
Option	Rigging frame: SR-RF12 Digital processor: D-901 or D-2008	Rigging frame: SR-RF12WP Digital processor: D-901 or D-2008	Rigging frame: SR-RF12 Digital processor: D-901 or D-2008	Rigging frame: SR-RF12WP Digital processor: D-901 or D-2008
Recommended Subwoofer	SR-A18B			

SR-A18B
Subwoofer

Enclosure: Bass-reflex type
Power Handling Capacity: Continuous program: 720W
Rated Impedance: 8Ω
Sensitivity (1W, 1m): 95dB
Frequency Response: 40 – 400Hz
Crossover Frequency: 80Hz
Speaker Component: 46cm cone-type

Input Connector: M5 screw terminal, distance between barriers: 12.2mm and Neutrik NL4MP × 2
Finish: Enclosure: Plywood, black paint/Front grille: Punched steel plate, black acrylic paint
Dimensions: 29.1(W) × 22.6(H) × 27.5(D) in
Weight: 145.5lbs (including accessories)
Accessory: Joint plate × 2, Joint plate mounting bolt (M10) × 16
Option: Rigging frame: SR-RF12

SR-C8L/SR-C8LWP
Line Array Speaker System

SR-C8S/SR-C8SWP
Line Array Speaker System

SR-C15B/CR-C15BWP
Subwoofer

TOA's **Type C Mid-Size, Two-Way Line Array Speakers** feature wave front control technology which creates a sound field with high sound clarity and uniform sound pressure level. Recommended digital processor is the **D-901 or D-2008** (optional). They can be converted to operate in bi-amplifier or full-range modes with simple internal adjustment.

MAIN FEATURES

TYPE C MID-SIZE TWO-WAY LINE ARRAY SPEAKERS

- Superior sound quality - Sync-Drive technology keeps the audio in phase with its sources at the speakers to create an ideal linear sound source.
- High-fidelity sound - due to the design of the speakers phase wave-front control technology, high-fidelity sound is produced without causing attenuation of high-frequency sound
- Two speaker configurations designed for specific sound coverage, each having a different taper:
  - 5-degree taper optimized for excellent long range coverage
  - 15-degree taper optimized for excellent short range coverage
- Adjustable sound coverage
- Resistant to feedback and enjoy reflection-free operation
- Single or bi-amp mode - by changing the position of an internal connector
- Weather-resistant versions available (SR-C8LWP / SR-C8SWP)
- Optional mounting brackets
- Optional subwoofer SR-C15B or weather-resistant SR-C15BWP
- 5 year warranty

SR-C15B
Enclosure: Bass-reflex type
Power Handling Capacity: Continuous program: 450W
Rated Impedance: 8Ω
Sensitivity (1W, 1m): 93dB
Frequency Response: 40 – 400Hz
Crossover Frequency: 125Hz
Speaker Component: 38cm cone-type
Input Connector: M5 screw terminal, distance between barriers: 12.2mm and Neutrik NL4MP × 2
Finish: Enclosure: Plywood, black urethane paint/ Front grille: Punched steel plate, black paint
Dimensions: 20.7(W) × 23.4(H) × 21.7(D) in
Weight: 90.4lbs
Accessory: M8 connection bolt × 4
Option: Rigging frame: SR-RF8

SR-C15BWP
Enclosure: Bass-reflex type
Power Handling Capacity: Continuous program: 450W
Rated Impedance: 8Ω
Sensitivity (1W, 1m): 93dB
Frequency Response: 40 – 400Hz
Crossover Frequency: 125Hz
Speaker Component: 38cm cone-type
Connected Cable: Direct cable withdrawal from internal speaker: 8.6mm, conductor cross section: 1.25mm^2, 4-core cable, 9.8ft
Operating Temperature: 14°F to +122°F
Dust/Water Protection: IPX4
Finish: Enclosure: Plywood, black, urethane coating/ Front grille: Punched stainless steel, black paint
Dimensions: 20.7(W) × 23.4(H) × 21.7(D) in
Weight: 90.4lbs
Accessory: M8 connection bolt × 4
Option: Rigging frame: SR-RF8WP

	SR-C8L	SR-C8LWP	SR-C8S	SR-C8SWP
Enclosure	Bass-reflex type			
Power Handling Capacity	Continuous program: 360 W (single-amp mode); Low: 360 W, High: 180 W (bi-amp mode)			
Rated Impedance	16 Ω (single-amp mode); Low: 16 Ω, High: 16 Ω (bi-amp mode)			
Sensitivity	98 dB (1 W, 1 m) (single-amp mode); Low: 95 dB (1 W, 1 m), High: 110 dB (1 W, 1 m) (bi-amp mode)			
Frequency Response	65 - 20,000 Hz (when using an optional DSP processor)			
Crossover Frequency	1,600 Hz (when using an optional DSP processor)			
Directivity Angle	Horizontal: 110°, Vertical: 5°		Horizontal: 110°, Vertical: 15°	
Speaker Component	Low frequency: 8" (20 cm) cone-type High frequency: Wave front control horn 110° (horizontal) × 5° (vertical) + compression driver × 2		Low frequency: 8" (20 cm) cone-type High frequency: Wave front control horn 110° (horizontal) × 15° (vertical) + compression driver × 2	
Input Connector	M5 screw terminal, distance between barriers: 0.48" (12.2mm) and Neutrik NL4MP × 2			
Connected Cable	--	Direct cable withdrawal from internal speaker: 0.34" (8.6 mm), conductor cross section: 0.05" (1.25mm^2), 4-core cable, 9.84 ft (3 m)	--	Direct cable withdrawal from internal speaker: 0.34" (8.6 mm), conductor cross section: 0.05" (1.25mm^2), 4-core cable, 9.84 ft (3 m)
Water Protection	--	IPX4	--	IPX4
Finish	Enclosure: Plywood, black, urethane paint; Front grille: Punched steel plate, black, paint	Enclosure: Plywood, black, urethane coating; Front grille: Punched stainless steel, black, paint	Enclosure: Plywood, black, urethane paint; Front grille: Punched steel plate, black, paint	Enclosure: Plywood, black, urethane coating; Front grille: Punched stainless steel, black, paint
Dimensions	20.73" (W) × 11.54" (H) × 11.65" (D) / 526.6 (W) × 293 (H) × 296 (D) mm			
Weight	37.48lbs (17kg)		35.27lbs (16kg)	
Accessory	M8 connection bolt x 4			
Option	Cluster bracket: SR-CL8 Rigging frame: SR-RF8 Tilt joint bracket: SR-TP8 Digital processor: D-901 or D-2008	Rigging frame: SR-RF8WP Digital processor: D-901 or D-2008	Cluster bracket: SR-CL8 Rigging frame: SR-RF8 Tilt joint bracket: SR-TP8 Digital processor: D-901 or D-2008	Rigging frame: SR-RF8WP Digital processor: D-901 or D-2008
Recommended Subwoofer	SR-C15B	SR-C15BWP	SR-C15B	SR-C15BWP

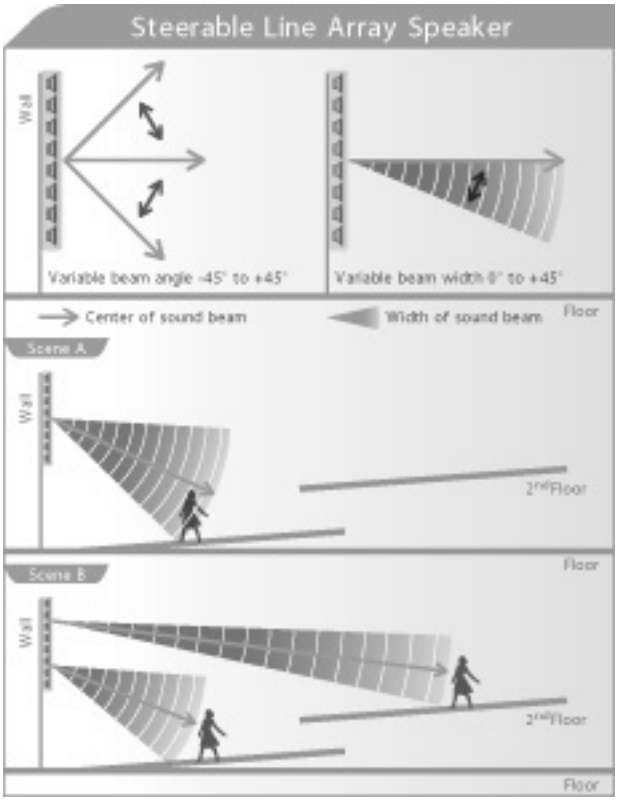
SR-D8-M/SR-D8-S
Steerable Line Array Speaker

TOA brought together it s proprietary line array technology and digital signal processing (DSP) technology in developing the **SR-D8 Steerable Line Array Speaker**. As well as processing both analog and digital audio input, this innovative speaker harnesses 8 built-in digital amplifiers to project sound waves to targeted areas with greater precision than is possible with conventional speakers. By digitally shaping the width and angle of acoustic beams, it can steer sound precisely to desired areas without requiring a change of installation location.

SR-D8-M Main Speaker
Power Source: 120 V AC, 60
Power Consumption: 320 W (Rated output), 72 W (Based on UL/CSA Standards)
Frequency Response: 130 Hz - 20 kHz
S/N Ratio: 100 dB or more (A-weighted), DSP+Amplifier
Coverage: Horizontal: 90°/Vertical Beam Width: Up to 45°/ Vertical Beam Angle: ±45° (Adjustable by using the supplied SR-D8 setting software)
Amplification System: Class D, 8 channels
Speaker Component: Low frequency: 10 cm cone-type x 8; High frequency: 2.5 cm balanced dome-type x 24
Output: 30 W, 1 channel (1% THD+N)
Maximum SPL: Max. 93 dB SPL (A-weighted, pink noise, 30 m)
Line Input: 2 analog audio inputs, +4 dB*, 10 k ohms, electronically-balanced, Removable terminal block (3 P)
Sampling Frequency: 48 kHz
Network I/F: Audio: CobraNet: 100BASE-TX, PRIMARY/ SECONDARY 2 system/Connection cable: Shielded twisted pair (STP) CAT5 or higher LAN cable to be connected via the specified switching hub/Max. distance: 100m (109.36 yd) (connected via a switching hub)/* This network should be completely independent of other LAN
Control: LAN: TCP/IP, 100BASE-TX 1 system, RJ45 receptacle (etherCON: NEUTRIK)/Connection cable: Shielded twisted pair (STP) CAT5 or higher LAN cable to be connected via the specified switching hub/Max. distance: 100 m (109.36 yd) (connected via a switching hub)
Communication between main and Sub Units: LOCAL LINK: TOA original digital audio transmission, RJ45 receptacle (etherCON: NEUTRIK)/Connection cable: Shielded twisted pair (STP) CAT5 or higher LAN cable
Signal Processing: Gain, Mute, Compression, Parametric EQ, High/Low shelving filters, Low/High-pass filters, All-pass filter, Notch filter, Horn EQ, Delay, Input matrix setting, 32 presets, etc
Finish: Enclosure: MDF, white, paint
Front grille: Punched steel plate, white, acrylic paint
Dimensions: 6.3 (W) x 10.04 (H) x 35.24 (D)
Weight: 46.3 lbs
Accessory: Power supply cord (2m (6.56 ft)) x 1, Removable terminal plug (3 P) x 2, Removable terminal plug (2 P) x 1, CD-ROM (setting software) x 1

SR-D8-S Slave Speaker
Power Source: 120 V AC, 60 Hz
Power Consumption: 315 W (Rated output), 72 W (Based on UL/CSA Standards)
Frequency Response: 130 Hz - 20 kHz
S/N Ratio: 100 dB or more (A-weighted), DSP+Amplifier
Coverage: Horiztonal: 90°/Vertical Bean Width: Up to 45°/Vertical Beam Angle: ±45° (Adjustable by using the supplied SR-D8 setting software)
Amplification System: Class D, 8 channels
Speaker Component: Low frequency: 10 cm cone-type x 8/ High frequency: 2.5 cm balanced dome-type x 24
Output: 30 W, 1 channel (1% THD+N)
Maximum SPL: Max. 93 dB SPL (A-weighted, pink noise, 30 m)
Sampling Frequency: 48 kHz
Network I/F: Control: LAN: TCP/IP, 100BASE-TX 1 system (auto-negotiation), RJ45 receptacle (etherCON: NEUTRIK)/ Connection cable: Shielded twisted pair (STP) CAT5 or higher LAN cable to be connected via the specified switching hub/ Max. distance: 100 m (109.36 yd) (connected via a switching hub)
Communication between Main and Sub Units: LOCAL LINK: TOA original digital audio transmission, RJ45 receptacle (etherCON: NEUTRIK)/Connection cable: Shielded twisted pair (STP) CAT5 or higher LAN cable
Signal Processing: Gain, Mute, Compression, Parametric EQ, High/Low shelving filters, Low/High-pass filters, All-pass filter, Notch filter, Horn EQ, Delay, Input matrix setting, 32 presets, etc
Finish: Enclosure: MDF, white, paint
Front grille: Punched steel plate, white, acrylic paint
Dimensions: 6.3 (W) x 10.04 (H) x 35.24 (D)
Weight: 46.3 lbs
Accessory: Power supply cord (2m (6.56 ft)) x 1, Removable terminal plug (3 P) x 1, Removable terminal plug (2 P) x 1

CobraNet is a registered trademark of Cirrus Logic Corporation.
etherCON is a registered trademark of NEUTRIK Corporation.



Optional Accessory

SR-D8FB
Fixing Bar

Finish: Steel plate, white, paint
Weight: 120g (including accessories)
Accessory: Bracket fixing screw (M8 upset head) x 2, Nut (M8) x 1

SR-D8EP
Extension Plate

Number of Speaker to be Joined: Max. 4 (when using 3 sets of SR-D8EP)
Product Composition: L bracket x 1, R bracket x 1
Finish: Steel plate, white, paint
Weight: 6.39lbs (including accessories)
Accessory: Speaker mounting screw (M6 upset head) x 16

SR-D8WB
Wall Mounting Bracket

Product Composition: Speaker bracket x 1, Wall bracket x 1
Finish: Steel plate, white, paint
Weight: 10.36lbs (including accessories)
Accessory: Speaker mounting screw (M6 upset head) x 8, Bracket fixing screw (M10 upset head) x 4

Note: Wall mounting Screws for the mounting bracket are not supplied.

SR-D8HB
Hoisting Bracket

Product Composition: Hoisting bracket x 1, Eyebolt x 1
Finish: Steel plate, white, paint
Weight: 5.29lbs (including accessories)
Accessory: Speaker mounting screw (M6 upset head) x 8

SR-D8CS
Wall Mounting Adapter

Finish: Steel plate, white, paint
Weight: 240g (including accessories)
Accessory: Bracket connection screw (M8 upset head) x 4

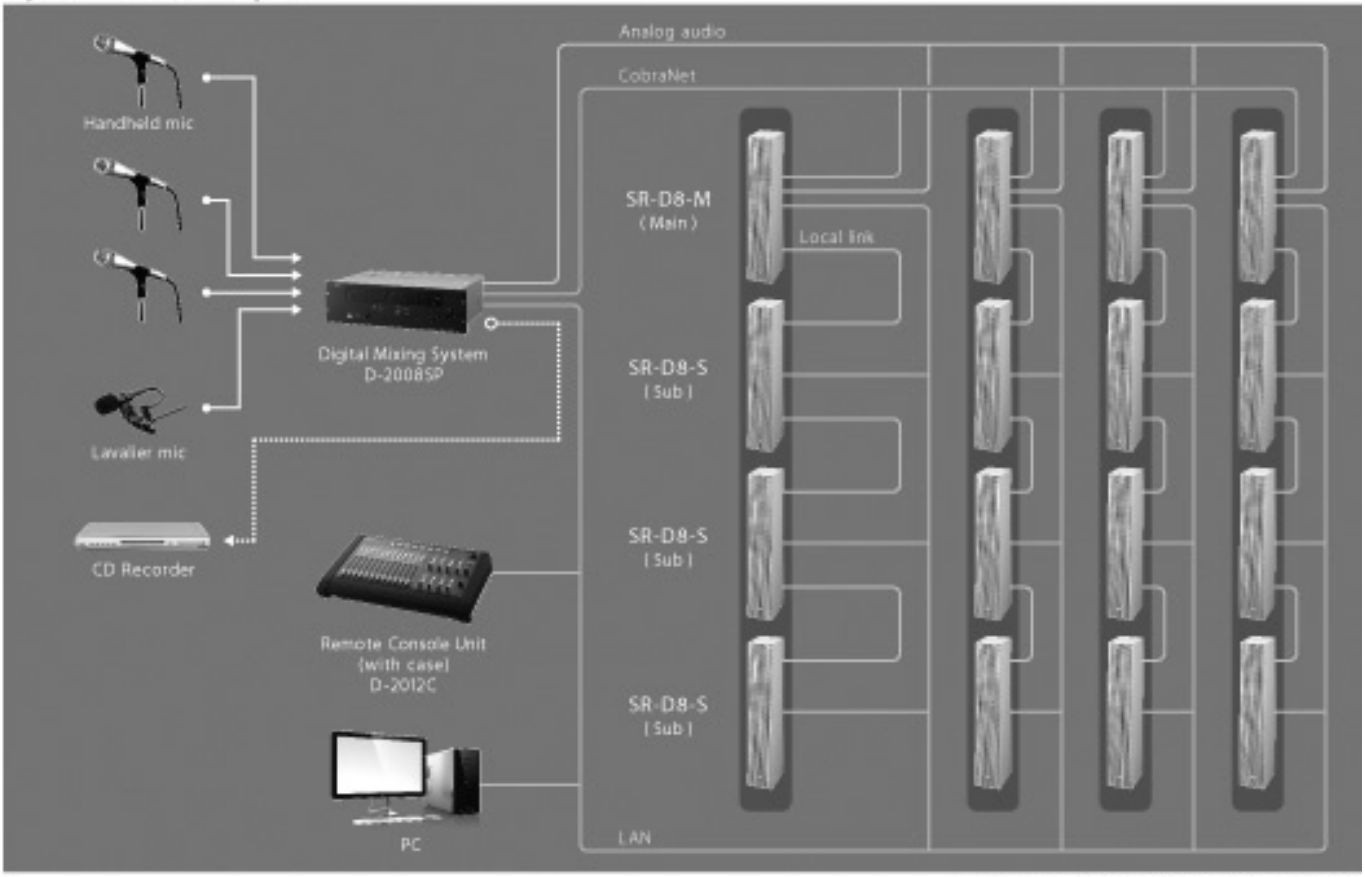
Note: Wall mounting Screws for the mounting bracket are not supplied.

SR-D8CL
Wall Mounting Adapter

Finish: Steel plate, white, paint
Weight: 1.68lbs (including accessories)
Accessory: Bracket connection screw (M8 upset head) x 4

Note: Wall mounting Screws for the mounting bracket are not supplied.

System Example



*In this case, either analog audio or CobraNet will be used

SR-S4L/SR-S4LWP
Line Array Speaker System

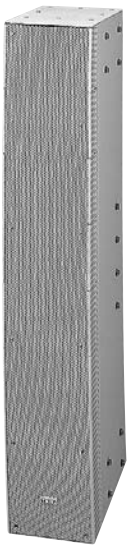
TOA's **Type S Slim Type Two-Way Line Array Speakers** have a low visual profile that fits into demanding settings. They are ideal for venues with highly reflective interior surfaces such as conference centers, houses of worship and railway stations. The slim compact design is also ideal for speech applications.

Optional Accessory

MT-S0601
Matching Transformer

Rated Input Power: 60W
Input Impedance: 100V Line; 170Ω (60W), 330Ω (30W), 670Ω (15W)/
70V Line; 83Ω (60W), 170Ω (30W), 330Ω (15W), 670Ω (7.5W)
Output Impedance: 8Ω
Weight: 2.6lbs

SR-S4S/SR-S4SWP
Line Array Speaker System

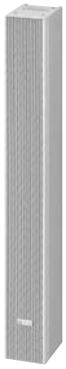


MAIN FEATURES
TYPE S SLIM TYPE TWO-WAY LINE ARRAY SPEAKERS
- Ideal for long (SR-S4L/WP) or short (SR-S4S/WP) distance sound transmission
- Can be converted into the bi-amplifier drive system by changing the internal connection
- Can be used for high-impedance applications with optional MT-S0601 Matching Transformer
- Highly controlled coverage yields improved intelligibility
- Multiple drivers (8 LF, 24 HF) for high sensitivity and power handling
- In-line driver arrangement for superior vertical coverage control
- SR-S co-axial design allows for even horizontal dispersion of frequencies
- Horizontal coverage remains broad through speech range:
  - SR-S4L Long-throw (0°V x 90°H)
  - SR-S4S Short-throw (10°V x 90°H)
- (8) 4" cone drivers and (24) 1" balanced dome tweeters
- Weather-resistant versions available (SR-S4LWP / SR-S4SWP)
- Optional mounting hardware and 70.7 V transformer
- 5 year warranty

	SR-S4L	SR-S4LWP	SR-S4S	SR-S4SWP
Enclosure	Bass-reflex type	Sealed type	Bass-reflex type	Sealed type
Power Handling Capacity	Continuous program: 600 W (single-amp mode) Low 240 W, High 240 W (bi-amp mode)			
Rated Impedance	8 Ω (single-amp mode) Low 8 Ω, High 8 Ω (bi-amp mode)			
Sensitivity	94 dB (1 W, 1 m)		93 dB (1 W, 1 m)	
Frequency Response	70 - 20,000 Hz (when using an optional DSP processor)			
Crossover Frequency	3,500 Hz			
Directivity Angle	Horizontal: 90°, Vertical: 0° (within the range of speaker height)		Horizontal: 90°, Vertical: 10°	
Speaker Component	Low frequency: 4" (10cm) cone-type × 8 High frequency: 1" (2.5cm) balanced dome-type × 24			
Input Connector	M5 screw terminal, distance between barriers: 12.2 mm and Neutrik NL4MP × 2			
Connected Cable	--	Direct cable withdrawal from internal speaker: 0.34" (8.6 mm), conductor cross section: 0.05" (1.25mm), 4-core cable, 9.84ft (3m)	--	Direct cable withdrawal from internal speaker: 0.34" (8.6 mm), conductor cross section: 0.05" (1.25mm), 4-core cable, 9.84ft (3m)
Operating Temperature	--	-10°C to +50°C	--	-10°C to +50°C
Water Protection	--	IPX4	--	IPX4
Finish	Enclosure: MDF, white, paint, Front grille: Punched steel plate, white, acrylic paint	Enclosure: Plywood, white, urethane coating, Front grille: Punched stainless steel (SUS304), white, paint	Enclosure: MDF, white, paint, Front grille: Punched steel plate, white, acrylic paint	Enclosure: Plywood, white, urethane coating, Front grille: Punched stainless steel (SUS304), white, paint
Dimensions	6.3" (W) x 35.2" (H) x 10" (D) 160 (W) × 895 (H) × 255 (D) mm	6.3" (W) x 35.2" (H) x 10" (D) 160 (W) × 895 (H) × 255 (D) mm (excluding connected cable)	6.3" (W) x 35.1" (H) x 11.9" (D) 160 (W) × 892 (H) × 303 (D) mm	6.3" (W) x 35.1" (H) x 11.9" (D) 160 (W) × 892 (H) × 303 (D) mm (excluding connected cable)
Weight	35.27lbs (16kg)			
Accessory	Bi-amplifier drive rating label x 1, Bi-amplifier drive input indication label x 1			
Option	Matching transformer: MT-S0601, Extension plate: SR-EP4, Flying bracket: SR-FB4, Wall mounting bracket: SR-WB4, Wall tilt bracket: SR-TB4, Stand adapter: SR-SA4, Protection pad: SR-PP4, Floor stand: SR-FS4, Digital processor: D-901 or D-2008	Matching transformer: MT-S0601, Extension plate: SR-EP4WP, Wall mounting bracket: SR-WB4WP, Wall tilt bracket: SR-TB4WP, Protection pad: SR-PP4, Digital processor: D-901 or D-2008	Matching transformer: MT-S0601, Extension plate: SR-EP4, Flying bracket: SR-FB4, Wall tilt bracket: SR-TB4, Stand adapter: SR-SA4, Protection pad: SR-PP4, Digital processor: D-901 or D-2008	Matching transformer: MT-S0601, Extension plate: SR-EP4WP, Wall tilt bracket: SR-TB4WP, Protection pad: SR-PP4, Digital processor: D-901 or D-2008

Type H Series

SR-H2L
Line Array Speaker System



TOA's **Type H Ultra-Slim Line Array Speakers** form a linear sound source vertically in close proximity. They can be used in 8Ω or arranging individual speaker units vertically for high-impedance applications with the installation of the optional **MT-S0301** Matching Transformer. **Type H Ultra-Slim Line Array Speakers** are ideal for medium-sized, speech applications, where clear, uniformly dispersed sound that is audible at a distance is essential, including conference centers, houses of worship, railway stations, or venues with highly reflective interior surfaces.

SR-H2S
Line Array Speaker System

MAIN FEATURES
- Sync-drive technology provides controlled vertical dispersion with minimal attenuation over distance
- L version may be stacked for additional SPL and distance coverage (requires SR-EP3 joining bracket)
- Slim compact design ideal for speech applications
- Low visual profile fits into demanding settings
- Highly controlled coverage yields improved intelligibility
- In-line driver arrangement for superior vertical coverage control
- All drivers share the same horizontal axis for best horizontal dispersion
- Horizontal coverage remains broad through speech range:
  - SR-H3L Long-throw (0°V x 90°H)
  - SR-H3S Short-throw (20°V x 90°H)
- Full-range
- Optional mounting hardware and 70.7 V transformer
- 5 year warranty

	SR-H2L	SR-H2S	SR-H3L	SR-H3S
Enclosure	Bass-reflex type			
Power Handling Capacity	Continuous program: 180 W		Continuous program: 360 W	
Rated Impedance	8 Ω			
Sensitivity	92 dB (1 W, 1 m equivalent, measured at 4 m)	90 dB (1 W, 1 m equivalent, measured at 4 m)	95 dB (1 W, 1 m equivalent, measured at 8 m)	92 dB (1 W, 1 m equivalent, measured at 4 m)
Frequency Response	80 - 18,000 Hz (when using an optional DSP processor)	90 - 17,000 Hz (when using an optional DSP processor)	110 - 18,000 Hz (when using an optional DSP processor)	90 - 17,000 Hz(when using an optional DSP processor)
Directivity Angle	Horizontal: 90°, Vertical: 0° (within the range of speaker height)	Horizontal: 90°, Vertical: 20°	Horizontal: 90°, Vertical: 0° (within the range of speaker height)	Horizontal: 90°, Vertical: 20°
Speaker Component	2.8" (7cm) cone-type × 9		2.8" (7cm) cone-type × 16	
Input Connector	Removable input connector			
Finish	Enclosure: MDF, white, urethane paint, Front grille: Punched steel plate, white, acrylic paint			
Dimensions	3.31" (W) × 26.31" (H) × 4.53" (D) 84 (W) × 668.4 (H) × 115 (D) mm	3.31" (W) × 26.12" (H) × 4.53" (D) 84 (W) × 663.4 (H) × 115 (D) mm	3.31" (W) × 46.71" (H) × 4.53" (D) 84 (W) × 1186.4 (H) × 115 (D) mm	3.31" (W) × 46.35" (H) × 6.18" (D) 84 (W) × 1177.2 (H) × 157 (D) mm
Weight	9.7lbs (4.4kg)	9.26lbs (4.2kg)	16.75lbs (7.6kg)	17.42lbs (7.9kg)
Option	Matching transformer: MT-S0301, Extension plate: SR-EP3, Wall mounting bracket: SR-WB3, Wall tilt bracket: SR-TB3, Flying bracket: SR-FB3, Stand adapter: SR-SA3 (Applicable stand: ST-33B), Digital processor: D-901 or D-2008			

SR-H3L
Line Array Speaker System

SR-H3S
Line Array Speaker System

Optional Accessory

MT-S0301
Matching Transformer

- For SR-H2S, SR-H3L and SR-H3S

Rated Input Power: 30W
Primary Side: 100V line: 330Ω (30W), 1kΩ (10W)/ 70V line: 170Ω (30W), 330Ωs (15W), 1kΩ (5W)
Secondary Side: 8Ω
Weight: 370g

HX-5B/HX-5B-WP
Compact Array Speaker System

TOA's **HX-5** Series are 2-way compact speakers that permit both constant directivity control over a wide frequency range and changes in that directivity. It is ideal for reproducing clear sound in spaces with long reverberation times or high background noise. The **HX-5** is designed for indoor (**HX-5B/W**) and outdoor (**HX-5B-WP/W-WP**) use.

HX-5W/HX-5W-WP
Compact Array Speaker System

MAIN FEATURES
- Ideal for arenas, auditoriums, houses of worship, gymnasiums and more!
- Adjustable dispersion angle to 15, 30, 45, or 60 degrees
- Improved intelligibility through tailored coverage
- Compact design includes four pre-assembled modules with four LF drivers and twelve HF dome tweeters
- In-line driver arrangement for superior vertical coverage control
- Horizontal coverage remains broad through speech range: 100 deg. fixed
- Contoured waveguide-baffle for distortion-free coverage control
- Up to 4 HX-5 units can be stacked to increase SPL and coverage control
- Lightweight polypropylene construction
- Available in black and white, weather-resistant versions available (HX-5B-WP/HX-5W-WP)
- Parallel connectors - dual speakon and screw terminal
- Vertical or horizontal mounting
- Built-in surface-mount bracket
- Hardware included for flying / suspension
- Optional wall, ceiling and stand-mount hardware
- Optional bracket for joining multiples into one array
- Compatible with omnimount 60 Series mounting hardware
- Optional subwoofer FB-120B, FB-120W *(see page #62)*
- 5 year warranty

	HX-5B	HX-5W	HX-5B-WP	HX-5W-WP
Enclosure	Bass-reflex type		Sealed type	
Power Handling Capacity	Continuous pink noise: 200 W, Continuous program: 600 W			
Rated Impedance	8 Ω			
Sensitivity (1 W, 1 m)	96 dB (60° mode), 97 dB (45° mode), 98 dB (30° mode), 99 dB (15° mode)			
Frequency Response	70 - 20,000 Hz (-10 dB) (60° mode), 75 - 20,000 Hz (-10 dB) (45° mode); 80 - 20,000 Hz (-10 dB) (30° mode), 85 - 20,000 Hz (-10 dB) (15° mode)		95 - 20,000 Hz (-10 dB) (60° mode), 100 - 20,000 Hz (-10 dB) (45° mode); 105 - 20,000 Hz (-10 dB) (30° mode), 110 - 20,000 Hz (-10 dB) (15° mode)	
Crossover Frequency	4 kHz			
Directivity Angle	Horizontal: 100° (over 2000 Hz); Vertical: 60° (over 800 Hz), 45° (over 1.2 kHz), 30° (over 1.6 kHz), 15° (over 3.2 kHz) variable			
Speaker Component	Low frequency: 5" (12cm) cone-type × 4, High frequency: Balanced dome-type × 12			
Speaker Cord	--		2-core cabtyre cord with diameter of 0.2" (6mm)	
Water Protection	--		IPX4 (Install with the every speaker module downward.)	
Operating Temperature	--		-15°C to +50°C	
Input Terminal	Speakon NL4MP × 2 and M4 screw terminal			
Finish	Enclosure: Polypropylene, black, Punched net: Surface-treated steel plate, black	Enclosure: Polypropylene, white, Punched net: Surface-treated steel plate, white	Enclosure: Polypropylene, black, Punched net: Surface-treated steel plate, black, rust proof coating	Enclosure: Polypropylene, white, Punched net: Surface-treated steel plate, white, rust proof coating
Dimensions	16.06" (W) x 21.5" (H) x 13.46" (D) / 408 (W) × 546 (H) × 342 (D) mm			
Weight	35lbs (16kg)			
Accessory	Hanging bracket x 2, Hex. wrench x 1			
Option	Matching transformer: MT-200, Speaker mounting bracket: HY-PF1B, HY-CW1B, HY-WM1B, HY-WM2B, HY-CN1B, Speaker stand adapter: HY-ST1	Matching transformer: MT-200, Speaker mounting bracket: HY-PF1W, HY-CW1W, HY-WM1W, HY-WM2W, HY-CN1W, Speaker stand adapter: HY-ST1	Matching transformer: MT-200, Speaker mounting bracket: HY-PF1WP, HY-CW1WP, HY-WM1WP, HY-WM2WP, HY-CN1B-WP	Matching transformer: MT-200, Speaker mounting bracket: HY-PF1WP, HY-CW1WP, HY-WM1WP, HY-WM2WP, HY-CN1W-WP
Recommended Subwoofer	FB-120B/W (intended for indoor use only)			

FB-120B/FB-120W
Subwoofer

Power Handling Capacity: Continuous pin noise: 200W, Continuous program: 600W
Rated Impedance: 8Ω
Sensitivity (1W, 1m): 90dB at installation in free sound field/ 96dB at installation in 1/2 free sound field
Frequency Response: 40Hz – 1,2kHz (-10dB)
Speaker Component: 30cm cone-type
Input Terminal: Speakon NL4MP × 2 and M4 screw terminal, distance between barriers, 11mm
Finish: FB-120B: Enclosure: Plywood/Punched net: Steel plate, black, paint/
FB-120W: Enclosure: Plywood/Punched net: Steel plate, white, paint
Dimensions: 16(W) × 16(H) × 17.7(D) in
Weight: 33lbs
Option:
FB-120B: Speaker rigging frame: HY-PF1B
FB-120W: Speaker rigging frame: HY-PF1W

Optional Accessory

MT-200
Matching Transformer

Rated Input Power: 200W
Primary Side: 100V line: 50Ω (200W), 83Ω (120W), 167Ω (60W)/ 70V line: 25Ω (200W), 50Ω (100W), 83Ω (60W), 167 ohms (30W)
Secondary Side: 8Ω
Dust/Water Protection: IPX4 (the tilt angle must be within 45°)
Dimensions: 6.5 (W) × 5.6 (H) × 5.1 (D)in
Weight: 6.2lbs
Accessory: Speaker mounting bolt (8M) with washer × 2

H Series Speakers

H-1 EX
2-Way Flush Mount Speaker System

The **H SERIES INTERIOR DESIGN SPEAKERS** are the latest example of TOA's modern, innovative approach to commercial speaker design. The unique, stylish appearance and superb sound quality of the three models, the **H-1**, **H-2** and **H-2WP**, provide a welcome alternative to conventional wall-and ceiling-mount speakers. The **H-3** Wide Dispersion model offers 140° of horizontal coverage and mounts with a standard two-gang electrical box. Applications include speaker systems for houses of worship, hotels, offices, museums, restaurants, retail stores, residential spaces and many others. The **H-2WP/H-3WP** is a weather resistant version of the **H-2/H-3** for outdoor wall-mount applications such as terraces, gardens, patios and swimming pools.

The **H Series** Minimum Reflection design significantly reduces sound wave reflections and the resulting sound coloration that occurs with conventional bracket-mounted "box" type speakers. Wall- or ceiling-mount installation is fast and easy using standard electrical gang-boxes, and you can rotate and aim the loudspeaker components without altering the enclosure's external appearance. Optional subwoofer **HB-1**.

MAIN FEATURES
INTERIOR DESIGN SPEAKER
- Recessed speaker
- Sleek, stylish appearance blends well with modern architecture for background/foreground music and paging systems
- Minimum reflection design reduces sound wave reflections typical of conventional bracket-mounted "box" type speakers
- Loudspeaker components rotate internally to allow flexible aiming
- Two-way, sealed enclosure
- 3" x 2" cone woofer with neodymium magnet and 1" balanced-dome tweeter, ferrofluid-cooled
- Built-in passive crossover with optimized filter slopes
- Coverage Angle: 120° H x 100° V
- Overload protection circuitry
- Paintable grille
- Can be mounted in 5-gang electrical box
- Optional equalization with 900 Series module, model E-04R (DSP parameters also available)
- 5 year warranty

Enclosure: Sealed type
Power Handling Capacity: 90W (continuous program/4Ω)/ 30W (continuous pink noise/4Ω)
Rated Input: 12W (16Ω, high impedance)
Rated Impedance: 4Ω or 16Ω/100V line; 830Ω (12W), 1.7kΩ (6W), 3.3kΩ (3W)/
70V line; 420Ω (12W), 830Ω (6W), 1.7kΩ (3W), 3.3kΩ (1.5W)
Sensitivity (1W, 1m): 85dB at installation 1/2 free sound field (Measured by installing the unit in the center of a wall.)
Frequency Response: 120Hz – 20kHz
Speaker Element: Low frequency; 8 × 5 cm cone woofer
High frequency; Balanced dome-type
Input Terminal: Detachable screw terminal, (+)/(-) 2 each (for bridge connection)
Usable Cable: Solid cable, stranded cable: 0.2 - 2.5mm^2 (AWG No. 24 - 14 equivalent)
Finish: Cover; Fire-resistant ABS resin, white, paint/Punched net; Steel plate, white paint/Adapter frame; Stainless steel
Dimensions: 12.3 (W) × 5 (H) × 3.5 (D)in
Weight: 3.3lbs (including Adapter Frame)
Accessory: Adapter Frame (HY-H1) ×1, M4 mounting screw × 4, Hole pattern paper × 1.
Other Feature: Enclosure mounting angle: Up to 90° adjustable

* When installing, mount the Adapter Frame as switch box cover. (The Adapter Frame HY-H1 is also available as an optional accessory.)
* It is possible to mount the speaker directly to the switch box (without a cover.)

H-2 EX/H-2WP EX
2-Way Surface Mount Speaker System

MAIN FEATURES
INTERIOR DESIGN SPEAKER
- Surface mount speaker
- Sleek, stylish appearance blends well with modern architecture for background and foreground music and paging systems
- Weather-proof version available, model H-2WP
- Minimum reflection design reduces sound wave reflections typical of conventional bracket-mounted "box" type speakers
- Loudspeaker components rotate internally to allow flexible aiming
- Two-way, sealed enclosure
- 4" cone woofer with neodymium magnet and 1" balanced-dome tweeter, ferrofluid-cooled
- Built-in passive crossover with optimized filter slopes
- Coverage Angle: 100° H x 60° V
- Overload protection circuitry
- Paintable grille
- Optional system equalization with 900 Series module, model E-05R
- 5 year warranty

Enclosure: Sealed type
Power Handling Capacity: 120W (continuous program/4Ω)/ 40W (continuous pink noise/4Ω
Rated Input: 12W (16Ω, high impedance)
Rated Impedance: 4Ω or 16Ω/100V line; 830Ω (12W), 1.7kΩ (6W), 3.3kΩ (3W)/70V line; 420Ω (12W), 830Ω (6W), 1.7kΩ (3W), 3.3kΩ (1.5W)
Sensitivity (1W, 1m): 88dB at installation 1/2 free sound field (Measured by installing the unit in the center of a wall.)
Frequency Response: 100Hz – 20kHz
Speaker Element: Low frequency; 10cm cone-type/
High frequency; Balanced dome-type
Dust/Water Protection: IP64 (H-2WP only)
Input Terminal: Detachable screw terminal, (+)/(-) 2 each (for bridge connection)
Usable Cable: Solid cable, stranded cable: 0.2 - 2.5mm^2 (AWG No. 24 - 14 equivalent)
Finish: H-2: Punched net: Steel plate, white paint/Frame: Fire-resistant ABS resin, white, paint/Base frame; steel plate
H-2WP: Punched ne: Steel plate (zinc plating), white, poweder coating/Frame: ABS resin, white/Base frame; Stainless plate
Dimensions: 10.6 × 4.4 (H)in
Weight: 4.6lbs (including Base Frame)
Accessory: Base Frame ×1
Usable Electrical Box: 1-gang size switch box (with cover)
Other Feature: H-2: Angle of speaker: 360° adjustable in parallel to the mounting surface.
H-2WP: Angle of speaker: 360° adjustable in pararel to the mounting surface. (The angle should be kept 45° left and right each in a downward direction for the wall installation,)

* Without using an electrical box, mounting the supplied base frame directly to a wall or ceiling allows the speaker installation.
Note: Do not install the unit where it is likely to be corroded in such places as indoor pools, bathrooms, or seaside (H-2WP).

H-3 EX/H-3WP EX
2-Way Wall Mount Speaker System

MAIN FEATURES

WIDE-DISPERSION WALL-MOUNT SPEAKER

- Surface mount speaker
- Special appearance blends well with modern architecture for background/foreground music and paging systems
- Wide coverage area: 140° horizontal dispersion
- Weather-resistant version available, model H-3WP
- Minimum reflection design reduces sound wave reflections typical of conventional bracket-mounted “box” type speaker
- Two-way, sealed enclosure
- Dual 4” woofers with neodymium magnets and 1” dome tweeter
- Built-in crossover with optimized filter slopes
- Coverage Angle: 140° H x 70° V
- Overload protection circuitry
- Paintable grille
- Optional equalization with 900 Series module, model E-06RB
- 5 year warranty

Enclosure: Sealed type
Power Handling Capacity: 150W (continuous program/8Ω)/ 50W (continuous pink noise/8Ω)
Rated Input: 30W (16Ω, high impedance)
Rated Impedance: 8Ω or 16Ω/
100V line; 330Ω (30W), 670Ω (15W), 1.3kΩ (7.5W)/
70V line; 170Ω (30W), 330Ω (15W), 670Ω (7.5W), 1.3kΩ (3.75W)
Sensitivity (1W, 1m): 89dB at installation in 1/2 free sound field (Measured by installing the unit in the center of a wall.)
Frequency Response: 100Hz – 20kHz (-10dB) at installation in 1/2 free sound field (Measured by installing the unit in the center of a wall.)
Crossover Frequency: 4kHz
Dust/Water Protection: IPX4 (H-3WP only)
Speaker Component: Low frequency; 10cm cone-type × 2
High frequency; 2.5cm dome-type (neodymium magnet)
Input Terminal: Detachable screw terminal, (+)/(-) 2 each (for bridge connection)
Usable Cable: Solid cable, stranded cable: 0.2 – 2.5mm^2 (AWG No. 24 – 14 equivalent)
Finish: H-3: Enclosure: Fire-resistant ABS resin, black/
Front Frame: Fire-resistant ABS resin, off-white, paint/
Punched Net: Stainless plate, off-white, paint/
Base Frame; Steel plate, plating
H-3WP: Enclosure: Fire-resistant ABS resin, black/
Front Frame: Fire-resistant ABS resin, off-white, paint/
Punched Net: Steel plate (zinc plating), off-white, powder coating/
Base Frame; Stainless steel
Dimensions: 11.6 (W) × 12.5 (H) ×5 (D)in
Weight: 7.3lbs
Accessory: Front grille ×1/Base frame ×1/Electrical box mounting screw ×1 set
Usable Electrical Box: 2-gang electrical box

Note: Avoid using the unit near the shore or at an indoor swimming pool, as doing so may significantly reduce the product life (H-3WP).

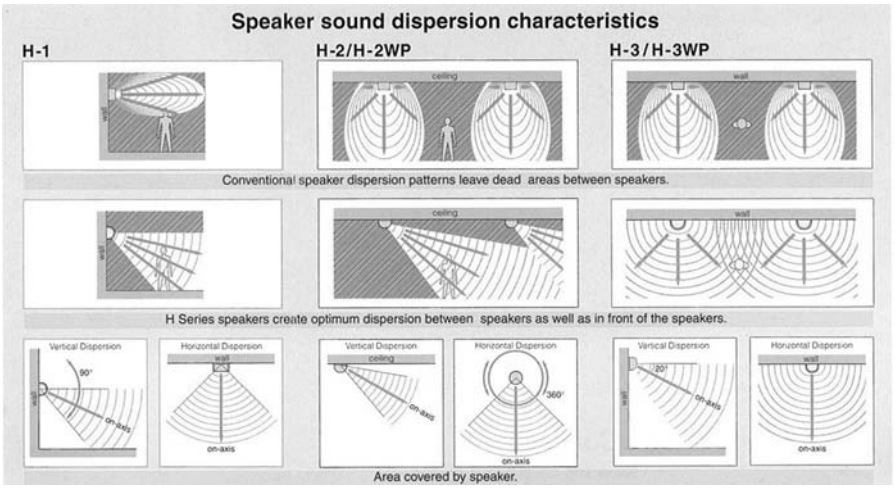
HB-1
Wall/Ceiling Mount Subwoofer

TOA’s **HB-1** is a high-power, wall/ceiling-mounted subwoofer system employing an 8” speaker unit. Although small in size, the **HB-1** provides clear extended low frequency sound reproduction thanks to its Acoustic Subwoofer enclosure construction.

MAIN FEATURES

- Low frequency enhancement for a wide variety of speaker system applications including hotels, houses of worship, museums, offices, residential spaces, restaurants, and retail stores
- Minimum-depth design allows recessed, flush-mount installation in spaces with only 4.1” of available depth
- Wall-mount between 16” spaced wall studs
- Ceiling-mount using supplied mounting frame and rigging points
- Tuned, ported enclosure for deep bass and low distortion
- Acoustic bandpass filter design eliminates need for external crossover
- Heavy-duty loudspeaker component: 8” woofer with ferrite magnet
- Solid, vibration-free steel enclosure: also acts as heat-sink to dissipate excessive heat away from the speaker component
- Frequency response: 45 to 200 Hz
- Sensitivity: 91 dB SPL (1 W / 1 m, 1/2 space)
- Continuous power handling: 240 W (8 Ω)
- Removable terminal block with loop-through terminations
- Paintable grille
- Mounting bracket included
- Optional 70.7/100 V multi-tap transformer, model MT-S0601 (60 W max.)
- Optional 900 Series low-pass-filter module, model E-07S
- 5 year warranty

Enclosure: Acoustic Super Woofer
Power Handling Capacity: 240W (continuous program, 40 – 200Hz)/80W (continuous pink noise, 40 – 200Hz)
Rated Impedance: 8Ω
Sensitivity (1W, 1m):91dB installation in 1/2 free sound field (Measured by installing the unit in the center of a ceiling or wall.)/ 85dB installation in 1/2 free sound field (Measured in anechoic chamber.)
Frequency Response: 45 – 200Hz (-10dB) installation in 1/2 free sound field (Measured by installing the unit in the center of a ceiling or wall.)
Speaker Component: 20cm cone speaker
Input Terminal: Detachable screw terminal, (+)/(-) 2 each (for bridge connection)
Usable Cable: Solid cable, stranded cable: 0.2 – 2.5mm^2 (AWG No. 24 – 14)
Finish: Enclosure; Steel plat, black paint/
Front Frame; Fire-resistant ABS resin, off-white, paint/
Punched net; Steel plate, off-white, paint/
Mounting bracket; Steel plate, black paint
Dimensions: 17 (W) × 21.4 (H) ×5.3 (D)in
Weight: 24.3lbs (including front grille and mounting bracket)
Accessory: Front frame ×1, Mounting bracket ×1 set, Anchor piece × 2, Stud holder × 4, Screw ×1 set
Option: Matching transformer: MT-S0601 (rated 60W)


Speaker sound dispersion characteristics
H-1
H-2/H-2WP
H-3/H-3WP
Conventional speaker dispersion patterns leave dead areas between speakers.
H Series speakers create optimum dispersion between speakers as well as in front of the speakers.
Vertical Dispersion
Horizontal Dispersion
Area covered by speaker.

	H-1 EX	H-2 EX	H-2WP EX	H-3 EX	H-3WP EX
Enclosure Type	Sealed type				
Power Handling	90 W (continuous program/4 Ω) 30 W (continuous pink noise/4 Ω)	120 W (continuous program/4 Ω), 40 W (continuous pink noise/4 Ω)		150 W (Continuous program/8 Ω) 50 W (Continuous pink noise/8 Ω)	
Rated Input	12 W (16 Ω, high impedance)			30 W (16 Ω, high impedance)	
Rated Impedance	4 Ω, 16 Ω 100 V line: 830 Ω (12 W), 1.7 kΩ (6 W), 3.3 kΩ (3 W) 70 V line: 420 Ω (12 W), 830 Ω (6 W), 1.7 kΩ (3 W), 3.3 kΩ (1.5 W)			8 Ω, 16 Ω 100 V line: 330 Ω (30W), 670 Ω (15W), 1.3 kΩ (7.5W) 70 V line: 170 Ω (30W), 330 Ω (15W), 670 Ω (7.5W), 1.3 kΩ (3.75W)	
Output Sound Pressure Level	85 dB (1 W, 1 m) at installation in 1/2 free sound field (Measured by installing the unit in the center of a wall.)	88 dB (1 W, 1 m) at installation in 1/2 free sound field (Measured by installing the unit in the center of a wall.)		89 dB (1 W, 1 m) at installation in 1/2 free sound field (Measured by installing the unit in the center of a wall.)	
Frequency Response	120 - 20,000 Hz	100 - 20,000 Hz		100 - 20,000 Hz (-10 dB) at installation in 1/2 free sound field (Measured by installing the unit in the center of a wall.)	
Dust/Water Protection	--	--	IP64	--	IPX4
Crossover Frequency	--	--	--	4,000 Hz	
Speaker Component	Low frequency: 3.1” x 2” (8 × 5 cm) cone-type High frequency: Balanced dome-type	Low frequency: 4” (10cm) cone-type, High frequency: Balanced dome-type		Low frequency: 4” (10cm) cone-type × 2 High frequency: 1” (2.5cm) dome-type (neodymium magnet)	
Input Terminal	Detachable screw terminal, (+)/(-) 2 each (for bridging connection)				
Usable Cable	Solid cable, stranded cable: 0.01” - 0.1” (0.2 - 2.5 mm) (AWG No. 24 - 14 equivalent)				
Finish	Cover: Fire-resistant ABS resin, white, paint Punched net: Steel plate, white, paint Adapter frame: Stainless steel	Punched net: Steel plate, white, paint Frame: Fire-resistant ABS resin, white, paint Base frame: Steel plate	Punched net: Steel plate (zinc plating), white, powder coating Frame: Fire-resistant ABS, white, paint Base frame: Stainless plate	Enclosure: Fire-resistant ABS resin, black Front frame: Fire-resistant ABS resin, off-white, paint Punched net: Steel plate, off-white, paint Base frame: Steel plate, plating	Enclosure: Fire-resistant ABS resin, black Front frame: Fire-resistant ABS resin, off-white, paint Punched net: Steel plate (zinc plating), off-white, powder coating Base frame: Stainless steel
Dimensions	12.3” (W) x 5” (H) x 4” (D) 312 (W) × 126 (H) × 90 (D) mm	11” x 4” (268 × 111mm)		11.6” (W) x 12.5” (H) x 5.1” (D) 295 (W) × 318 (H) × 129 (D) mm	
Weight	3.3lbs (1.5kg) (including adapter frame)	4.6lbs (2.1kg) (including base frame)		7.2lbs (3.3kg)	
Accessory	Adapter frame x 1, Mounting screw (M4 × 25) x 4, Hole pattern paper x 1	Base frame x 1		Front grille x 1, Base frame x 1	
Usable Electrical Box	--	1-gang type* (with cover)		2-gang type	
Other Feature	Enclosure mounting angle: Up to 90° adjustable	Angle of speaker: 360° adjustable in parallel to the mounting surface	Angle of speaker: 360° adjustable in parallel to the mounting surface (The angle should be kept within 45° left and right each in a downward direction for the wall installation.)	--	
Recommended Subwoofer	HB-1, FB-100				

F Series Speakers

Wide-Dispersion Speakers

F-1000BT/1000WT
F-1000BTWP/1000WTWP
2-Way Wide-Dispersion Speaker System

TOA's **F-1000/F-1300/F-2000 Series** speakers are compact two-way speakers designed for high efficiency, wide range, and high power input handling capability. These speakers can be installed in a manner ideal for any location and intended application. WP - weather-resistant models feature a water-proof design (splash-proof type meeting IPX4 standard), so that it can be permanently installed outdoors.

MAIN FEATURES
- Compact box speakers for music and voice paging distribution
- Excellent sound quality
- Sixteen models: black or white, indoor or outdoor (IPX4), low impedance (8 Ω) 70/100V
- Octagonal horn design for smooth coverage
- Adjustable high frequency dispersion (F-2000 models)
- Extruded cabinet design improves low frequency performance
- Paintable grille and enclosure
- Individual protection circuit on each component (low impedance models only)
- Screwdriver-adjustable power taps (70/100V models)
- Wall/ceiling-mount bracket included
- Optional board, cluster and pole-mount brackets
- OmniMount-compatible (F-2000 models only, Series 20.5CA/WA)
- Optional subwoofers, model HB-1, FB-100 or FB-120 *(see page #61/62)*
- 5 year warranty

F-1000 Series
- LF Driver: 4" cone woofer
- HF Driver: balanced-dome tweeter
- Dispersion: 90° H x 90° V

F-1300 Series
- LF Driver: 5" cone woofer
- HF Driver: 1" dome tweeter
- Dispersion: 110° H x 100° V

F-2000 Series
- LF Driver: 8" cone woofer
- HF Driver: 1" hard-dome tweeter
- Dispersion (adjustable): 110° H x 100° V; 80° H x 80° V

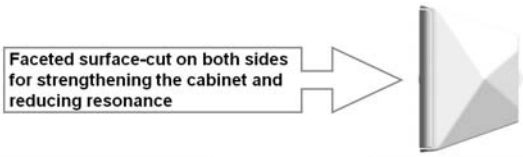
	F-1000BT	F-1000WT	F-1000BTWP*	F-1000WTWP*
Enclosure	Bass-reflex type			
Rated Input/Power Handling Capacity	15 W/Continuous pink noise: 30 W Continuous program: 90 W			
Rated Impedance	8Ω 100 V line: 670 Ω (15 W), 2 kΩ (5 W), 3.3 kΩ (3 W), 10 kΩ (1W) 70 V line: 330 Ω (15 W), 670 Ω (7.5 W), 2 kΩ (2.5 W), 3.3 kΩ (1.5 W), 8 Ω,10 kΩ (0.5W)			
Sensitivity	87 dB (1 W, 1 m) at installation in 1/2 free sound field			
Frequency Response	85 - 20,000 Hz, -10 dB at installation in 1/2 free sound field			
Crossover Frequency	5 kHz			
Directivity Angle	Horizontal: 90°, Vertical: 90°			
Speaker Component	Low frequency: 4" (10cm) cone-type; High frequency: Balanced dome tweeter			
Input Terminal	Push-in terminal			
Water Protection	--		IPX4	
Operating Temp.	--		-10◦C to +50◦C (14◦F to 122◦F)	
Finish	Enclosure: HIPS, black, Punched net: Surface-treated steel plate, black, paint, Joint bracket, wall bracket: Steel plate, t1.6, black, paint, Speaker bracket: Die-cast aluminum, black, paint	Enclosure: HIPS, white, Punched net: Surface-treated steel plate, white, paint, Joint bracket, wall bracket: Steel plate, t1.6, white, paint, Speaker bracket: Die-cast aluminum, white, paint	Enclosure: HIPS, black, Punched net: Surface-treated steel plate, black, anticorrosive paint, Joint bracket, wall bracket: Stainless steel (SUS304), t1.5, Speaker bracket: Die-cast aluminum, black, paint	Enclosure: HIPS, black, Punched net: Surface-treated steel plate, white, anticorrosive paint, Joint bracket, wall bracket: Stainless steel (SUS304), t1.5, Speaker bracket: Die-cast aluminum, white, paint
Dimensions	5.12" (W) x 7.95" (H) x 5.16" (D) / 130 (W) × 202 (H) X 131 (D) mm			
Weight	4.41lbs (2kg) (including the supplied brackets)			
Accessory	Speaker bracket x 1, Joint bracket x 1, Wall bracket x 1, Bracket fixing screw x 1 set		Speaker bracket x 1, Joint bracket x 1, Wall bracket x 1, Bracket fixing screw x 1 set, Terminal cover x 1, Terminal cover mounting screw x 4	
Option	Board hanger bracket: HY-BH10B ; Ceiling mount bracket: HY-CM10B (used for the horizontal speaker mounting); Cluster bracket: HY-CL10B	Board hanger bracket: HY-BH10B; Ceiling mount bracket: HY-CM10W (used for the horizontal speaker mounting); Cluster bracket: HY-CL10B	Pole mount strap: YS-60B	
Recommended Subwoofer	HB-1, FB-120			

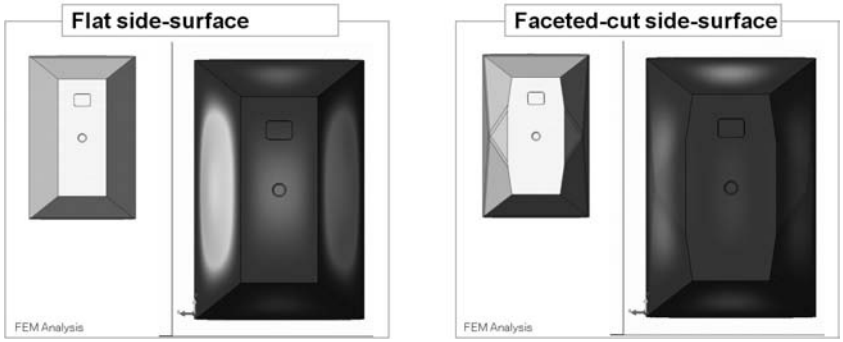
* Avoid installing the WP version of this speaker in places where it is likely to be corroded such as bathrooms, indoor pools, or seaside.

F-1300BT/1300WT
F-1300BTWP/1300WTWP
2-Way Wide-Dispersion Speaker System

	F-1300BT	F-1300WT	F-1300BTWP*	F-1300WTWP*
Enclosure	Bass-reflex type			
Rated Input	30 W			
Rated Impedance	100 V line: 330 Ω (30 W), 1 kΩ (10 W), 3.3 kΩ (3 W), 10 kΩ (1 W) 70 V line: 170 Ω (30 W), 330 Ω (15 W), 1 kΩ (5 W), 3.3 kΩ (1.5 W), 10 kΩ (0.5 W)			
Sensitivity	90 dB (1 W, 1 m) at installation in 1/2 free sound field			
Frequency Response	80 - 20,000 Hz, -10d B at installation in 1/2 free sound field			
Crossover Frequency	2 kHz			
Directivity Angle	Horizontal: 110°, Vertical: 100°			
Speaker Component	Low frequency: 5” (13cm) cone-type; High frequency: 1” (25mm) dome tweeter		Low frequency: 5” (13cm) cone-type	
Input Terminal	Push-in terminal			
Water Protection	--		IPX4	
Operating Temp.	--		-10°C to +50°C (14°F to 122°F)	
Finish	Enclosure: HIPS, black, Punched net: Surface-treated steel plate, black, paint, Joint bracket, wall bracket: Steel plate, t1.6, black, paint, Speaker bracket: Die-cast aluminum, black, paint	Enclosure: HIPS, white, Punched net: Surface-treated steel plate, white, paint, Joint bracket, wall bracket: Steel plate, t1.6, white, paint, Speaker bracket: Die-cast aluminum, white, paint	Enclosure: HIPS, black Punched net: Surface-treated steel plate, black, anticorrosive paint Joint bracket, wall bracket: Stainless steel (SUS304), t1.5 Speaker bracket: Die-cast aluminum, black, paint	Enclosure: HIPS, black Punched net: Surface-treated steel plate, white, anticorrosive paint Joint bracket, wall bracket: Stainless steel (SUS304), t1.5 Speaker bracket: Die-cast aluminum, white, paint
Dimensions	6.38” (W) × 9.84” (H) x 6.34” (D) / 162 (W) × 250 (H) × 161 (D) mm			
Weight	7.94lbs (3.6kg) (including the supplied brackets)			
Accessory	Speaker bracket x 1, Joint bracket x 1, Wall bracket x 1, Bracket fixing screw x 1 set		Speaker bracket x 1, Joint bracket x 1, Wall bracket x 1, Bracket fixing screw x 1 set, Terminal cover x 1, Terminal cover mounting screw x 4	
Option	Board hanger bracket: HY-BH10B; Ceiling mount bracket: HY-CM10B (used for the horizontal speaker mounting); Cluster bracket: HY-CL10B	Board hanger bracket: HY-BH10B; Ceiling mount bracket: HY-CM10W (used for the horizontal speaker mounting); Cluster bracket: HY-CL10B	Pole mount strap: YS-60B	
Recommended Subwoofer	FB-120B/W			

* Avoid installing the WP version of this speaker in places where it is likely to be corroded such as bathrooms, indoor pools, or seaside.





F-2000BT/2000WT
F-2000BTWP/2000WTWP
2-Way Wide-Dispersion Speaker System

With Horn Adapter

Without Horn Adapter

	F-2000BT	F-2000WT	F-2000BTWP*	F-2000WTWP*
Enclosure	Bass-reflex type			
Rated Input	60 W			
Rated Impedance	100 V line: 170 Ω (60 W), 330 Ω (30 W), 670 Ω (15 W), 3.3 kΩ (3 W) 70 V line: 83 Ω (60 W), 170 Ω (30 W), 330 Ω (15 W), 670 Ω (7.5 W), 3.3 kΩ (1.5 W)			
Sensitivity	92 dB (1 W, 1 m) at installation in 1/2 free sound field; 93 dB (1 W, 1 m) at installation in 1/2 free sound field (with horn adapter)			
Frequency Response	65 - 20,000 Hz, -10 dB at installation in 1/2 free sound field			
Crossover Frequency	2.5 kHz			
Directivity Angle	Horizontal: 110°, Vertical: 100°; Horizontal: 80°, Vertical: 80° (with horn adapter)			
Speaker Component	Low frequency: 8” (20cm) cone-type; High frequency: 1” (25mm) dome tweeter			
Input Terminal	Push-in terminal			
Water Protection	-		IPX4	
Operating Temp.	-		-10°C to +50°C (14°F to 122°F)	
Finish	Enclosure: HIPS, black, Punched net: Surface-treated steel plate, black, paint, Joint bracket, wall bracket: Steel plate, T2.0, black, paint, Speaker bracket: Die-cast aluminum, black, paint	Enclosure: HIPS, white, Punched net: Surface-treated steel plate, white, paint, Joint bracket, wall bracket: Steel plate, T2.0, white, paint, Speaker bracket: Die-cast aluminum, white, paint	Enclosure: HIPS, black Punched net: Surface-treated steel plate, black, anticorrosive paint Joint bracket, wall bracket: Stainless steel (SUS304), T2.0 Speaker bracket: Die-cast aluminum, black, paint	Enclosure: HIPS, black Punched net: Surface-treated steel plate, white, anticorrosive paint Joint bracket, wall bracket: Stainless steel (SUS304), T2.0 Speaker bracket: Die-cast aluminum, white, paint
Dimensions	9.61” (W) × 14.69” (H) × 9.25” (D) / 244 (W) × 373 (H) × 235 (D) mm			
Weight	16.31lbs (7.4kg) (including the supplied brackets)			
Accessory	Speaker bracket x 1, Joint bracket x 1, Wall bracket x 1, Bracket fixing screw x 1 set, Horn adapter x 1, Horn adapter mounting screw x 4		Speaker bracket x 1, Joint bracket x 1, Wall bracket x 1, Bracket fixing screw x 1 set, Horn adapter x 1, Horn adapter mounting screw x 4, Terminal cover x 1, Terminal cover mounting screw x 4	
Option	Ceiling mount bracket: HY-CM20B (used for the horizontal speaker mounting) Cluster bracket: HY-CL20B	Ceiling mount bracket: HY-CM20W (used for the horizontal speaker mounting) Cluster bracket: HY-CL20B	Pole mount strap: SP-131 + YS-60B	
Recommended Subwoofer	FB-120B/W			

* Avoid installing the WP version of this speaker in places where it is likely to be corroded such as bathrooms, indoor pools, or seaside.

Wide-Dispersion Ceiling Speakers

TOA's **F Series Ceiling Speakers** are ideal for music and paging applications such as audio conferencing, business music or retail sound systems. These speakers feature smooth off-axis coverage, versatile range of models, and ease of installation.

For premium wide-dispersion performance, TOA's **F-122CU** is a 5" full-range processed ceiling speaker, UL Listed for fire protective, general purpose signaling and air-handing spaces. Other full-range models include the **F-2322C** with 5" full-range driver and the ultra-compact **F-1522SC** with 4" full-range driver.

Two-way co-axial models include the **F-2852C** with 6.5" cone driver, the **F-2352C** with 5" cone driver, and the **F-2352SC** with 5" cone driver. Each model has a special diffusor with built-in dome tweeter for superior co-axial performance.

NON-PLENUM CEILING SPEAKERS: F-1522SC, F-2352SC
PLENUM CEILING SPEAKERS: F-122CU, F-122CU2, F-2322C, F-2322CU2, F-2352C, F-2352CU2, F-2852C, F-2852CU2

MAIN FEATURES
- Superior sound quality
- Wide-dispersion, smooth off-axis coverage
- Fast and easy installation
- Built-in 25/70.7 V multi-tap transformer
- Low impedance mode (8/16 Ohms)
- Convenient power tap selector on front baffle
- Integral metal back-can and safety cable models
- Low-profile, paintable grille
- Overload protection circuitry
- Mounting hardware included
- Competitive pricing
- 5 year warranty

CU2 Model Highlights
- Tile bridge included with speaker
- Faster installation
- Easier ordering
- Ships two units per box *(example: Order (1) F-122CU2 = two speakers and two tile bridges packaged and shipped in one box)*
- All of these new speaker packages are UL Rated:
  - General signaling speaker, UL1480 Category UEAY
  - Suitable for use in air-handling spaces, UL2043

MAIN FEATURES
F-122CU, F-122CU2
FULL-RANGE PREMIUM CEILING SPEAKER (5")
- 5" full-range driver
- Wide-dispersion: 180° (1-4k Hz avg.)
- Optimized equalization with model E-03R module
- Power handling: 30W (70.7V) / 120W (8Ω)
- Plenum ceiling speaker
- UL 1480 UUMW Fire Signal Rated
- 5 year warranty

MAIN FEATURES
F-2352C, F-2352CU2
CO-AXIAL CEILING SPEAKER (5")
- Co-axial: 5" cone driver and dome tweeter
- Wide-dispersion: 170° conical (1-4k Hz avg.)
- Power handling: 30W (70.7V) / 120W (8Ω)
- Plenum ceiling speaker
- 5 year warranty

MAIN FEATURES
F-2322C, F-2322CU2
FULL-RANGE CEILING SPEAKER (5")
- 5" full-range driver
- Wide-dispersion: 170° conical (1-4k Hz avg.)
- Power handling: 30W (70.7V) / 120W (8Ω)
- Plenum ceiling speaker
- 5 year warranty

MAIN FEATURES
F-2852C, F-2852CU2
CO-AXIAL CEILING SPEAKER (6.5")
- Extended bass response
- Co-axial: 6.5" cone driver and dome tweeter
- Wide-dispersion: 120° conical (1-4k Hz avg.)
- Power handling: 60W (70.7V) / 180W (8Ω)
- Plenum ceiling speaker
- 5 year warranty

MAIN FEATURES
F-2352SC
LOW POWER CO-AXIAL CEILING SPEAKER (5")
- Co-axial: 5" cone driver and dome tweeter
- Wide-dispersion: 155° conical (1-4k Hz avg.)
- Power handling: 6W (70.7V) / 18W (8Ω)
- Non-Plenum ceiling speaker *(plenum rated when using Q-HY-BC2 back can)*
- 5 year warranty

MAIN FEATURES
F-1522SC
COMPACT FULL-RANGE CEILING SPEAKER (4")
- 4" full-range driver
- Wide-dispersion: 160° conical (1-4k Hz avg.)
- Power handling: 6W (70.7V) / 18W (8Ω)
- Non-Plenum ceiling speaker
- 5 year warranty

	Plenum Ceiling Speakers				Non-Plenum Ceiling Speakers	
	F-2852C	**F-2322C**	**F-2352C**	**F-122CU**	**F-2352SC**	**F-1522SC**
2 Speakers in a box with 2 tile Bridges (UL1480 / 2043 rated)	***F-2852CU2***	***F-2322CU2***	***F-2352CU2***	***F-122CU2***	***N/A***	***N/A***
Enclosure	Bass reflex type				--	
Rated Input	60 W (High Impedance)	30 W (High Impedance)			6 W (High Impedance)	
Power Handling Capacity	Continuous pink noise: 90W (8Ω), 60W (16Ω) Continuous program: 180W (8Ω), 120W (16Ω)	Continuous pink noise: 60W (8Ω), 30W (16Ω) Continuous program: 120W (8Ω), 60W (16Ω)			Continuous pink noise: 9W (8Ω), 6W (16Ω) Continuous program: 18W (8Ω), 12W (16Ω)	
Impedance	100V line: 60W (170Ω), 30W (330Ω), 15W (670Ω), 3W (3.3kΩ) 70V line: 60W (83Ω), 30W (170Ω), 15W (330Ω), 7.5W (670Ω), 1.5W (3.3kΩ) 25V line: 7.5W (83Ω), 3.7W (170Ω), 1.9W (330Ω), 0.9W (670Ω), 0.2W (3.3kΩ) 16Ω, 8Ω	100V line: 30W (330Ω), 10W (1kΩ), 3W (3.3kΩ), 1W (10kΩ) 70V line: 30W (170Ω), 15W (330Ω), 5W(1kΩ), 1.5W (3.3kΩ), 0.5W (10kΩ) 25V line: 3.7W (170Ω), 1.9W (330Ω), 0.6 (1kΩ), 0.2W (3.3kΩ), 0.06W (10kΩ) 16Ω, 8Ω			100V line: 6W (1.7kΩ), 3W (3.3kΩ), 1W (10kΩ), 0.5W (20kΩ) 70V line: 6W (830Ω), 3W (1.7kΩ), 1.5W (3.3kΩ), 0.5W (10kΩ), 0.25W (20kΩ) 25V line: 0.75W (830Ω), 0.4W (1.7kΩ), 0.2W (3.3kΩ), 0.06W (10kΩ), 0.03W (20kΩ) 16Ω, 8Ω	
Sound Pressure Level	91 dB (1 W, 1 m)	90 dB (1 W, 1 m)			89 dB (1 W, 1 m)	88 dB (1 W, 1 m)
Frequency Response	60-20,000 Hz (-10dB), 45-20,000 Hz (-20dB) at installation in 1/2 free sound field (Measured by installing the unit in the center of a ceiling.)	70 - 20,000 Hz (-10 dB), 50 - 20,000 Hz (-20 dB) at installation in 1/2 free sound field (Measured by installing the unit in the center of a ceiling.)			80-20,000 Hz (-10dB), 50-20,000 Hz (-20dB) at installation in 1/2 free sound field (Measured by installing the unit in the center of a ceiling.)	65-18,000 Hz (-10dB), 45-20,000 Hz (-20dB) at installation in 1/2 free sound field (Measured by installing the unit in the center of a ceiling.)
Speaker Component	High frequency: Dome-type, Low frequency: 6.5" (16cm) cone-type	5" (12cm) cone-type	High frequency: Balanced dome-type, Low frequency: 5" (12cm) cone-type	5" (12cm) cone-type	High frequency: Balanced dome-type Low frequency: 5" (12cm) cone-type	4" (10cm) cone-type
Mounting Hole	10" (250mm) (Maximum ceiling thickness: 1"/37mm)	8" (200mm) (Maximum ceiling thickness: 1"/37mm)				5" (135mm) (Maximum ceiling thickness: 1"/37mm)
Input Terminal	Removable locking connector with screw-down terminals (2 input terminals and 2 bridge terminals)				Push-in connector (Bridging terminal-2 branch type)	
Usable Cable	Solid copper wire: 0.02" - 0.06" (0.5 - 1.6 mm) (equivalent to AWG No. 24 - 14) Stranded copper wire: 0.01" - 0.1" (0.2 - 2.5 mm) (equivalent to AWG No. 24 - 14)				600 V Vinyl-insulated cable (IV wire or HIV wire) Solid copper wire: 0.03" - 0.06" (0.8 - 1.6 mm) (equivalent to AWG No. 20 - 15) 7-core twisted copper wire: 0.03" - 0.05" (0.75 - 1.25 mm) (equivalent to AWG No. 18- 17)	
Finish	Enclosure: Steel plate, plating Baffle: Fire-resistant ABS resin (resin material grade: UL-94 V-0 or its equivalent), black Rim: Fire-resistant ABS resin (resin material grade: UL-94 V-0 or its equivalent), white, paint Punched net: Steel plate, white, paint		Enclosure: Steel plate, plating		Baffle: Fire-resistant ABS resin (resin material grade: UL-94 V-0 or its equivalent), black Rim: Fire-resistant ABS resin (resin material grade: UL-94 V-0 or its equivalent), white, paint Punched net: Steel plate, white, paint Dust-proof bag: Artificial fiber, black	
Dimensions	11" x 9" (D) 280 × 227 (D) mm	9" x 8" (D) 230 × 200 (D) mm	9" x 9" (D) 230 × 229 (D) mm		9" x 6" (D) 230 × 154 (D) mm	6" x 5" (D) 155 × 117 (D) mm
Weight	11lbs (5.1kg) (including mounting accessories)	8lbs (3.7kg) (including mounting accessories)			11lbs (1.5kg) (including panel)	2.2lbs (1kg) (including panel)
Accessory	Panel x 1, Ceiling reinforcement ring x 1, Safety wire x 1, Paper pattern x 1				Panel x 1, Paper pattern x 1	
Option	Anchor hanging bracket: HY-AH1**, Tile bar bridge: TBF-100	Anchor hanging bracket: HY-AH1**, Back can: HY-BC1, Q-HY-BC1W; Tile bar bridge: TBF-100, Trim ring: HY-TR1		Anchor hanging bracket: HY-AH1**, Back can: HY-BC1, Q-HY-BC1W; Tile bar bridge: TBF-100, Trim ring: HY-TR1	Back can: Q-HY-BC2, HY-BC1, Q-HY-BC1W; reinforcement ring: HY-RR2, Anchor hanging bracket: HY-AH1** (HY-RR2 required), Tile bar bridge: TBF-100 (HY-RR2 required), Trim ring: HY-TR1 (HY-RR2 required)	Reinforcement ring: HY-RR1

***** Special Order Product***

Optional Accessories

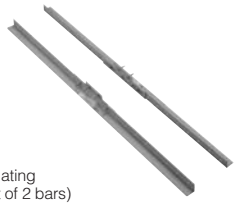
HY-BC1
Back Can

Finish: Surface-treated steel plate, t0.8, black, paint
Weight: 3.3lbs
Accessory: Rubber grommet × 2

HY-TR1
Trim Ring

Ceiling Hole Diameter: 200 – 300mm
Finish: Surface-treated steel plate, white, paint
Weight: 500g

HY-TB1
Tile Bar Bridge



Finish: Steel plate, plating
Weight: 500g (for set of 2 bars)
Accessory: Mounting screw × 4

HY-AH1
Anchor Hanging Bracket

Finish: Steel plate, plating
Weight: 700g
Accessory: Paper pattern × 1

HY-RR1
Reinforcement Ring

Ceiling Hole Diameter: 135mm
Finish: Surface-treated steel plate
Weight: 80g

HY-RR2
Reinforcement Ring

Ceiling Hole Diameter: 200mm
Finish: Surface-treated steel plate
Weight: 280g

HS Series Speakers

HS-1200BT/HS-1200WT
HS-1500BT/HS-1500WT
Coaxial Array Speaker System

HS-1200WT

HS-1500BT

The **HS Series** is a 2-way speaker system that features a large diameter woofer with a co-axial tweeter array. It can be installed and used in many different applications with combined use of the supplied accessories and/or the optional mounting brackets.

MAIN FEATURES
- High quality sound
- Coaxial tweeter array incorporating six balanced dome tweeters
- 70V and 8Ω selectable
- Narrow-directivity control (90° horizontal x 40° vertical)
- Built-in overload protection circuitry for the tweeters
- Four models: black or white; 12" or 15" low frequency driver
- Twin input terminal connections
- SPEAKON terminal for quick connection
- Screw terminals recommended for long-term installation
- Compact light weight enclosure
- Wedge-shape enclosure enables use as a floor monitor
- Provided attachable accessories
- Handle for easy portability
- Rubber feet for upright placement
- Optional wall/ceiling-mount brackets available
- 5 year warranty

	HS-1200BT	HS-1200WT	HS-1500BT	HS-1500WT
Enclosure	Sealed type			
Rated Input	60 W (High Impedance)			
Power Handling Capacity	Continuous pink noise: 100 W (Low Impedance); Continuous program: 300 W (Low Impedance)			
Rated Impedance	8 Ω 100 V line: 170 Ω (60 W), 330 Ω (30 W), 670 Ω (15 W) 70 V line: 83 Ω (60 W), 170 Ω (30 W), 330 Ω (15 W), 670 Ω (7.5 W)			
Sensitivity	97 dB (1 W, 1 m)		98 dB (1 W, 1 m)	
Frequency Response	70 - 20,000 Hz		60 - 20,000 Hz	
Crossover Frequency	3 kHz			
Directivity Angle	Horizontal: 90°, Vertical: 40°			
Speaker Component	Low frequency: 12" (30cm) cone-type High frequency: Balanced dome tweeter × 6		Low frequency: 15" (38cm) cone-type High frequency: Balanced dome tweeter × 6	
Input Terminal	NEUTRIK NL4MP Speakon and M4 screw terminal, distance between barriers: 0.35" (9mm)			
Operating Temperature	-10°C to +50°C (14°F to 122°F)			
Finish	Enclosure: Polypropylene, black, Punched net: Surface-treated steel plate, black	Enclosure: Polypropylene, white, Punched net: Surface-treated steel plate, white	Enclosure: Polypropylene, black, Punched net: Surface-treated steel plate, black	Enclosure: Polypropylene, white, Punched net: Surface-treated steel plate, white
Dimensions	14.21" (W) × 17.64" (H) × 12.6"(D) 361 (W) × 448 (H) × 320 (D) mm		17.76" (W) × 22.05" (H) × 15.75" (D) 451 (W) × 560 (H) × 400 (D) mm	
Weight	22.05lbs (10kg)		30.86lbs (14kg)	
Accessory	Handle x 1, Handle fitting bracket x 2, Handle mounting screw x 2, Rubber foot x 2, Rubber foot mounting screw x 2			
Option	Mounting bracket: HY-1200VB (for vertical speaker mounting), HY-1200HB (for horizontal speaker mounting), Ceiling mount bracket: HY-C0801, Wall mount bracket: HY-W0801	Mounting bracket: HY-1200VW (for vertical speaker mounting), HY-1200HW (for horizontal speaker mounting), Ceiling mount bracket: HY-C0801W, Wall mount bracket: HY-W0801W	Mounting bracket: HY-1500VB (for vertical speaker mounting), HY-1500HB (for horizontal speaker mounting), Ceiling mount bracket: HY-C0801, Wall mount bracket: HY-W0801	Mounting bracket: HY-1500VW (for vertical speaker mounting), HY-1500HW (for horizontal speaker mounting), Ceiling mount bracket: HY-C0801W, Wall mount bracket: HY-W0801W

Conference Systems

TS-900/TS-800 Series Systems

TS-900/TS-800 Series Infrared Wireless Conference Systems

TOA's **TS-800/900 Series Infrared Conference Systems** are ideal for conferences and meetings in corporate, educational and hotel applications. This system provides secure wireless communications for conferences and boardrooms and the cordless operation removes all cables from view. The easy to use **TS Series** is comprised of the deluxe **TS-900 system** featuring up to 96 chairperson/delegate stations, three level voting and simultaneous translation audio channel. The economy **TS-800 system** supports up to 64 chairperson/delegate stations. All stations are powered with a rechargeable lithium-ion battery or AC power supply.

MAIN FEATURES
TS-800, TS-801, TS-802, TS-900, TS-901, TS-902, TS-903, TS-904, TS-905, TS-907
- Secure, wireless infrared communication assures freedom from eavesdropping and interference
- No cables on the conference table
- Easy to set up and operate
- Up to 96 Chairperson/Delegate stations each powered with rechargeable lithium-ion battery (ten hour operation) or AC power supply
- Convenient voting function (Yes, No, Abstain) (TS-900)
- Simultaneous translation channel (TS-900)
- RS-232 protocol compatible with AMX and Crestron
- 5 year warranty software

TS-800
Central Unit

TS-900
Central Unit

MAIN FEATURES
TS-800, TS-900 (WITH VOTING)
CENTRAL AMPLIFIER UNIT
- Four ports for model TS-905, TS-907 infrared transceiver
- Convenient vote results display (TS-900)
- Second language channel for simultaneous interpretation (TS-900)
- Aux and two Mic inputs
- PA/Record output
- Headphone output
- First-in-first-out, last-in-first-out, fixed for the first unit, and last-in-first-out for the subsequent units priorities
- Up to four simultaneously active mics

	TS-800	TS-900
Power Source	100 - 240 V AC, 50/60 Hz (supplied from AC adapter [accessory])	
Power Consumption	72 W	
Input	MIC: -60 dB*, 600 Ω, unbalanced, phone jack AUX: -20 dB*, 10 kΩ, unbalanced, phone jack	MIC 1 (Base Language): -60 dB*, 600 Ω, unbalanced, phone jack; MIC 2 (Translation Language): -60 dB*, 600 Ω, unbalanced, phone jack; AUX 1 (Base Language): -20 dB*, 10 kΩ, unbalanced, phone jack; AUX 2 (Translation Language): -20 dB*, 10 kΩ, unbalanced, phone jack; AUX 3 (Base and Translation Language): -20 dB*, 10 kΩ, unbalanced, phone jack
Output	REC: -20 dB*, 10 kΩ, unbalanced, phone jack, RCA pin jack; HEADPHONE: Mini jack	LINE: -20 dB*, 10 kΩ, unbalanced, phone jack; REC: -20 dB*, 10 kΩ, unbalanced, phone jack, RCA pin jack HEADPHONE: Mini jack
Number of Connectable Chairman/Delegate Units	64 units	96 units
Number of Connectable Infrared Transmitter/Receiver Units	4 units (up to 16 units by using four IR distributors)	
Infrared Transmitter/Receiver I/O Terminal	4 BNC jacks	
External Control Terminal	D-sub connector (9 P, male)	
LED Indicator	Audio signal receiving indicators 1 - 4 CH, Data signal receiving indicator, External control priority indicator, External control communication indicator, Power indicator, Battery indicator (flashes when a Chairman/Delegate unit's battery nears complete discharge)	Voting result indicators 1 - 3 (7-segment LED, double-digit number), Audio signal receiving indicators 1 - 4 CH, Data signal receiving indicator, External control priority indicator, External control communication indicator, Power indicator, Battery indicator (flashes when a Chairman/Delegate unit's battery nears complete discharge)
Function Switch	Simultaneous speaker No. setting switch: 1/2/4 Mic-off setting switch: TIME OUT ON/OFF Speech priority selector switch: A/B/C (A: First-in-first-out priority, B: Last-in-first-out priority, C: Fixed for the first unit, and last-in-first-out for the subsequent units)	
Microphone Mix/Cut Switch (for the Base Language)	--	Mix: Chairman/Delegate units + MIC 1 + AUX 1 + AUX 3 Base Language Cut: MIC 1 + AUX 1 + AUX 3 Base Language
Microphone Mix/Cut Switch (for the Translation Language)	--	Mix: Chairman/Delegate units + MIC 2 + AUX 2 + AUX 3 Translation Language Cut: MIC 2 + AUX 2 + AUX 3 Translation Language
AUX 3 Mixing Select Switch	--	Mix: AUX 3 input is relayed to the line output Cut: AUX 3 input is not relayed to the line output
Operating Temperature	32°F to 104°F (0°C to +40°C)	
Finish	Panel: Surface-treated steel plate, gray metallic, paint, semi-gloss	
Weight	6lbs (2.7kg)	6.2lbs (2.8kg)
Accessory	AC adapter (Cord length: 1.8 m DC cord, and 2 m detachable AC cord) x 1	
Option	Rack mounting bracket: MB-TS900	

The **TS-901** and **TS-801** are **Chairman** units, while TOA's **TS-902** and **TS-802** are **Delegate** units of the Infrared Conference system. Since the system is cordless, it can be easily installed and removed. The Chairman unit features a priority speech key which allows it to take precedence over the **TS-902 Delegate Units** (optional) when speaking. It can be operated on either the **AD-0910 AC adapter** (optional) or the **BP-900 Lithium-ion Battery** (optional). It is equipped with a remaining battery indicator. Two types of dedicated microphones are available for the **TS-901** as optional products: the **TS-903** standard type and the **TS-904** long type.

MAIN FEATURES
TS-801, TS-802, TS-901, TS-902
INFRARED CHAIRPERSON/DELEGATE STATION
- Gooseneck Microphone options:
  - TS-903 Standard (14.5")
  - TS-904 Long (20.4")
- Power options:
  - BP-900 rechargeable lithium-ion battery (requires BC-900 charger)
  - AD-0910 AC power adapter
- 5 year warranty

MAIN FEATURES
TS-901 (WITH VOTING), TS-801
INFRARED CHAIRPERSON STATION
- Voting function (TS-901)
- Monitoring of secondary audio channel for language interpretation (TS-901)
- Priority button for automatic over-ride delegate stations with Priority chime tone
- Talk button
- Built-in speaker automatically turns off when microphone is activated
- Adjustable monitor volume
- Headphone output

TS-901
Chairman Unit

TS-801
Chairman Unit

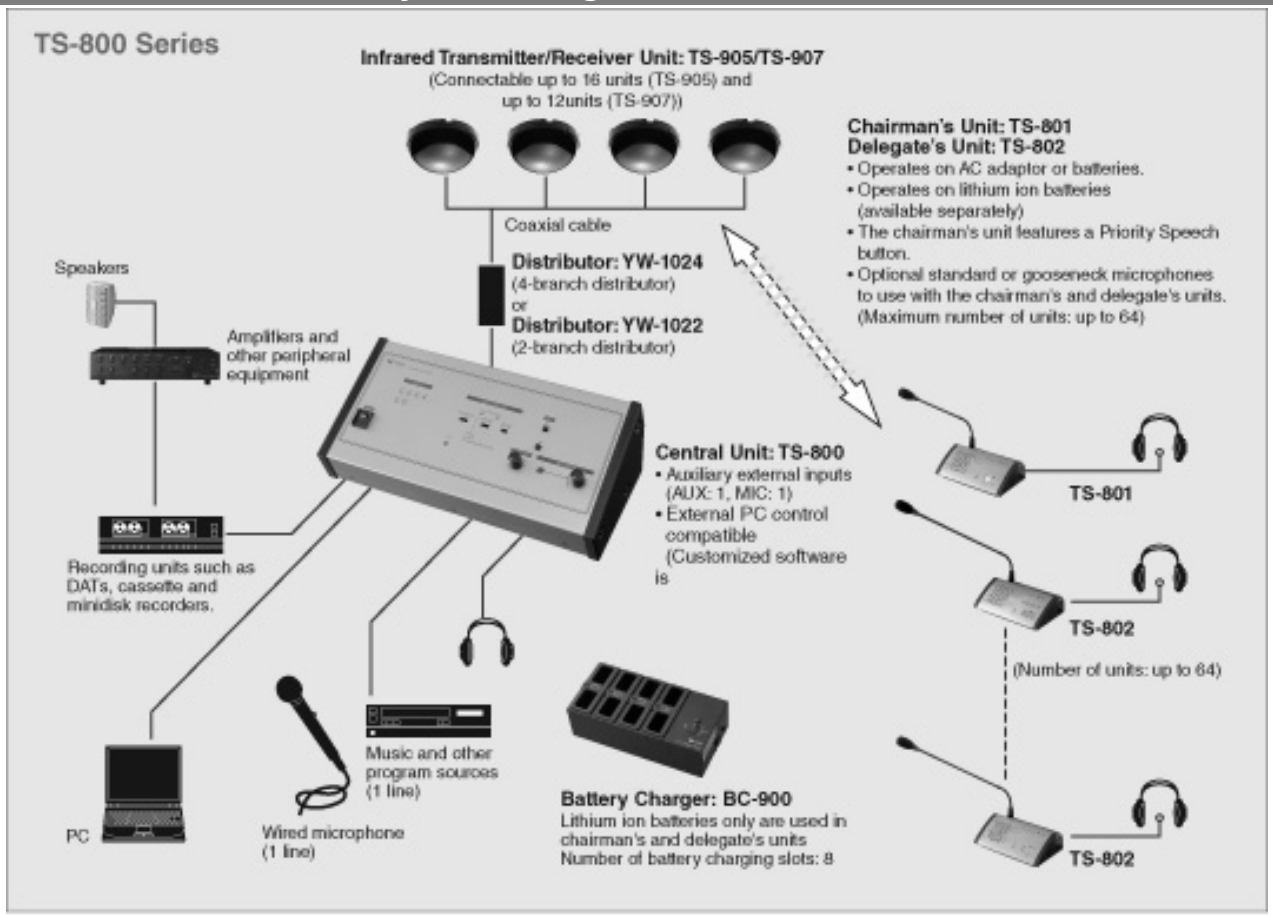
MAIN FEATURES
TS-902 (WITH VOTING), TS-802
INFRARED DELEGATE STATION
- Voting function (TS-902)
- Talk button
- Adjustable monitor volume
- Built-in speaker automatically turns off when microphone is activated
- Headphone output

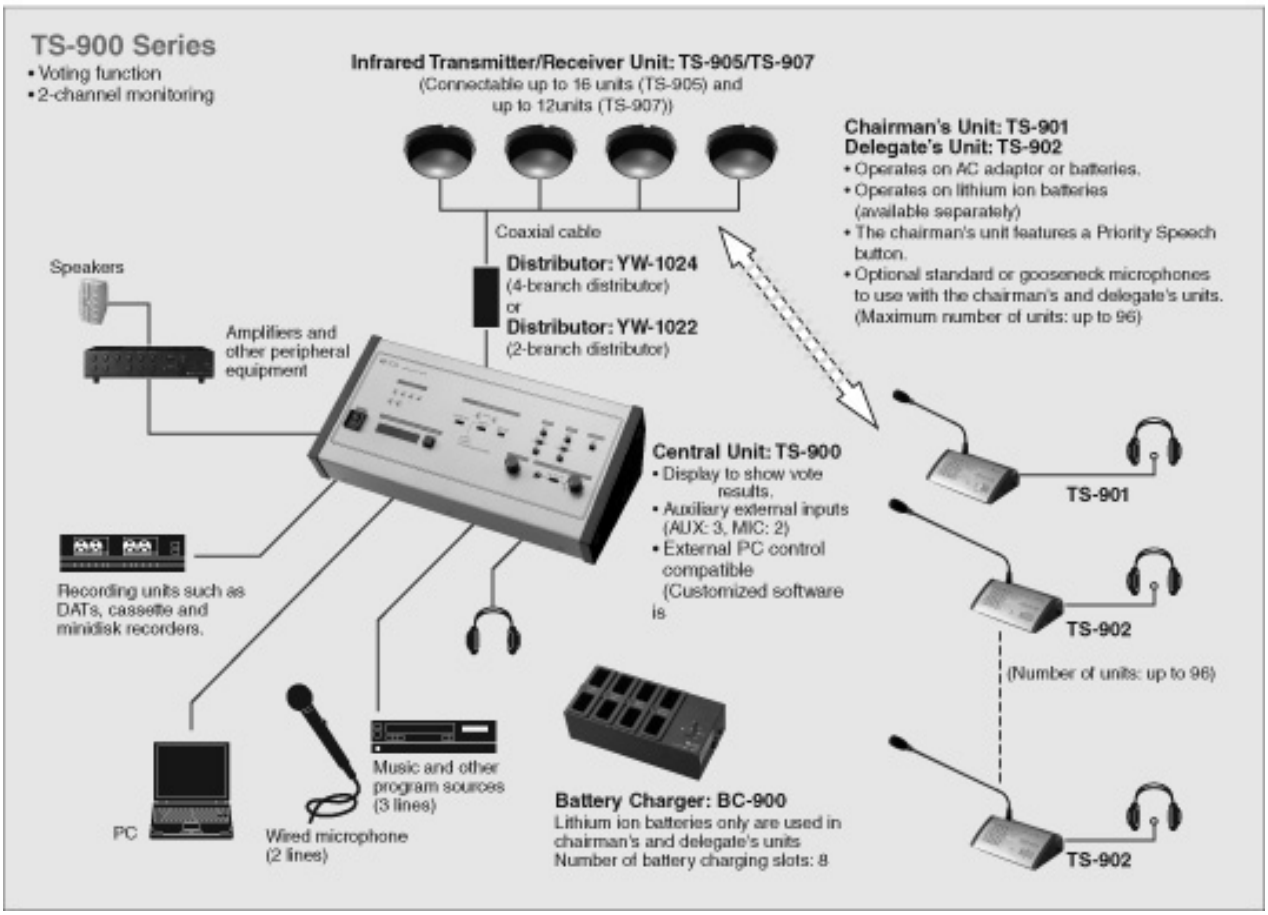
TS-902
Delegate Unit

TS-802
Delegate Unit

		TS-801/TS-802	TS-901/TS-902
Power Source		7.4 V DC (battery), 9 V DC (AC adapter) (supplied from BP-900 battery [option] or AD-0910 AC adapter [option])	
Current Consumption		Max. 270 mA	
Infrared Emitter/Detector	Wavelength	870 nm (AM: Brightness modulation)	
	Modulation Method	Frequency modulation	
	Carrier Frequency	**Transmission:** Audio channel 1: 7.35 MHz Audio channel 2: 8.10 MHz Audio channel 3: 8.55 MHz Audio channel 4: 9.15 MHz Control channel: 6.45 MHz	
		Reception: Audio channel: 1.95 MHz	**Reception:** Base language channel: 1.95 MHz Translation language channel: 2.25 MHz
	Acceptance Angle	Vertical: 90°, Horizontal: 120°	
	Emission Angle	Vertical: 90°, Horizontal: 120°	
	Covering Range	23ft (7m) (radius)	
Input		Microphone terminal: Combined type of XLR-4-31 (dedicated for connecting the optional TS-903 or TS-904)	
Output		Monitor speaker: 8 Ω, 0.2 W Headphone: Mini jack × 2	
LED Indicator		Speech indicator (flashes when the unit is out of communications range), Power indicator (flashes when the unit is out of communications range or when the battery level is low)	Speech indicator (flashes when the unit is out of communications range), Voting status indicators 1 -3 (flashes when the unit is out of communications range or when the battery level is low), Power indicator (flashes when the unit is out of communications range or when the battery level is low)
Battery Life		Approx. 10 hours (when the fully-charged BP-900 battery is used with "During speech" to "Standby" ratio of 1:2)	
Operating Temperature		0°C to +40°C (32°F to 104°F)	
Finish		Top panel: ABS resin, gray metallic, paint, semi-gloss	
Dimensions		8.3" (W) x 2.6" (H) x 6" (D) / 210 (W) × 65.9 (H) × 152 (D) mm	
Weight		1.4lbs (630g)	1.4lbs (640g)
Option		Microphone: TS-903, TS-904 (Select either one.), Lithium-ion battery: BP-900, AC adapter: AD-0910	

TS-800/TS-900 Series System Image


TS-800 Series
Infrared Transmitter/Receiver Unit: TS-905/TS-907
(Connectable up to 16 units (TS-905) and up to 12units (TS-907))
Chairman's Unit: TS-801
Delegate's Unit: TS-802
• Operates on AC adaptor or batteries.
• Operates on lithium ion batteries (available separately)
• The chairman's unit features a Priority Speech button.
• Optional standard or gooseneck microphones to use with the chairman's and delegate's units. (Maximum number of units: up to 64)
Coaxial cable
Speakers
Distributor: YW-1024
(4-branch distributor)
or
Distributor: YW-1022
(2-branch distributor)
Amplifiers and other peripheral equipment
Central Unit: TS-800
• Auxiliary external inputs (AUX: 1, MIC: 1)
• External PC control compatible (Customized software is
TS-801
TS-802
(Number of units: up to 64)
TS-802
Recording units such as DATs, cassette and minidisk recorders.
Music and other program sources (1 line)
Battery Charger: BC-900
Lithium ion batteries only are used in chairman's and delegate's units
Number of battery charging slots: 8
PC
Wired microphone (1 line)


TS-900 Series
• Voting function
• 2-channel monitoring
Infrared Transmitter/Receiver Unit: TS-905/TS-907
(Connectable up to 16 units (TS-905) and up to 12units (TS-907))
Chairman's Unit: TS-901
Delegate's Unit: TS-902
• Operates on AC adaptor or batteries.
• Operates on lithium ion batteries (available separately)
• The chairman's unit features a Priority Speech button.
• Optional standard or gooseneck microphones to use with the chairman's and delegate's units. (Maximum number of units: up to 96)
Coaxial cable
Speakers
Distributor: YW-1024
(4-branch distributor)
or
Distributor: YW-1022
(2-branch distributor)
Amplifiers and other peripheral equipment
Central Unit: TS-900
• Display to show vote results.
• Auxiliary external inputs (AUX: 3, MIC: 2)
• External PC control compatible (Customized software is
TS-901
TS-902
(Number of units: up to 96)
TS-902
Recording units such as DATs, cassette and minidisk recorders.
Music and other program sources (3 lines)
Battery Charger: BC-900
Lithium ion batteries only are used in chairman's and delegate's units
Number of battery charging slots: 8
PC
Wired microphone (2 lines)

TS-905
TS-907
Infrared Transmitter/ Receiver

MAIN FEATURES
- Installs in ceiling or wall
- TS-905: Up to 16 ft. ceiling height
- TS-907: 16 to 23 ft. ceiling height
- Connect up to sixteen (16) TS-905 or twelve (12) TS-907 using optional Antenna Distributors, model YW-1022Y (1x2) and YW-1024Y (1x4)
- Coaxial cable with BNC connectors (supplied by others)

		TS-905	TS-907
Power Source		24 V DC (supplied from the optional TS-900 or TS-800)	
Current Consumption		Max. 150 mA	Max. 180 mA
Infrared Emitter/Detector	Wavelength	870 nm (AM: Brightness modulation)	
	Modulation Method	Frequency modulation	
	Carrier Frequency	**Transmission:** Audio channel 1: 7.35 MHz Audio channel 2: 8.10 MHz Audio channel 3: 8.55 MHz Audio channel 4: 9.15 MHz Control channel: 6.45 MHz	
		Reception: Base language channel: 1.95 MHz Translation language channel: 2.25 MHz	
	Acceptance Angle	Vertical: 150° (75° + 75°), Horizontal: 360°	Vertical: 90° (45° + 45°), Horizontal: 360°
	Emission Angle	Vertical: 150° (75° + 75°), Horizontal: 360°	Vertical: 90° (45° + 45°), Horizontal: 360°
	Communication Area	Approx. 20 - 23 ft (6 - 7 m) in radius from the point underneath the unit (Ceiling height: 8.2" - 14.8" / 2.5 - 4.5 m)	Approx. 20ft (6m) in radius from the point underneath the unit (Ceiling height: 16.4" - 23" / 5 - 7 m)
Connection Terminal		BNC jack	
LED Indicator		Power	
Operating Temperature		0°C to +40°C	
Finish		Dome: PC resin, visible light cut filter Base: ABS resin, black	
Dimensions		4.7" x 2.8" (H) / 120 × 71.3 (H) mm	
Weight		0.5lbs (230g) (unit only)	
Accessory		Mounting bracket x 1, Stand mounting bracket x 1, Stand mounting bracket attaching screw x 3, Thread Adapter (W 5/16 - W 5/8) x 1	
Option		Microphone stand (The mounting thread size must be W 5/16 or W 5/8.)	

TS-903
Microphone

MAIN FEATURES
CHAIRPERSON AND DELEGATE STATION MICROPHONES
- TS-903 - Standard Gooseneck Microphone (14.5")
- TS-904 - Long Gooseneck Microphone (20.4")
- For TS-801, TS-802, TS-901, TS-902
- Electret condenser microphone element
- Distinctive red LED "in-use" indicator also flashes to show low battery status

(Note: TS-903/904 are not compatible with the TS-770 conferencing system)

TS-904
Microphone

	TS-903	TS-904
Type	Electret condenser microphone	
Directivity	Unidirectional	
Rated Impedance	1.8 kΩ	
Rated Sensitivity	-37 dB (1 kHz 0 dB = 1 V/Pa)	
LED Indicator	Speech indicator (ring type)	
Frequency Response	100 - 13,000 Hz	
Output Connector	Combined type of XLR-4-32	
Finish	Gooseneck: Stainless steel, black Other: ABS resin, black	
Weight	0.2lbs (90g)	0.23lbs (105g)
Applicable Unit (Option)	Chairman/Delegate units: TS-801, TS-802, TS-901, TS-902	

YW-1022
Distributor

Frequency Range: 1.6 – 1,000 MHz (excluding 50 – 70 MHz)
Distribution Loss: 4.5 dB ±3 dB (between the Mixing and each Distribution terminals)
Input/Output Impedance: 75 ohms
Coaxial Connector: Mixing terminal: BNC jack, power passing type (under 30 V DC, under 2 A)/ Distribution 1 and 2 terminals: BNC jack, power passing type (under 30 V DC, under 1 A)
Operation Temperature: 14°F to +122°F
Finish: ABS resin, gray
Dimensions: 3 (W) × 4.9 (H) × 1.3 (D) in
Weight: 105 g

YW-1024
Distributor

Frequency Range: 1.6 – 1,000 MHz (excluding 50 – 70 MHz)
Distribution Loss: 8.5 dB ±3 dB (between the Mixing and each Distribution terminals)
Input/Output Impedance: 75 ohms
Coaxial Connector: Mixing terminal: BNC jack, power passing type (under 30 V DC, under 2 A)/ Distribution 1 – 4 terminals: BNC jack, power passing type (under 30 V DC, under 1 A)
Operation Temperature: 14°F to +122°F
Finish: ABS resin, gray
Dimensions: 3 (W) × 4.9 (H) × 1.3 (D) in
Weight: 120 g

BC-900
Battery Charger

The **BC-900UL** is a dedicated battery charger for the **BP-900UL** (optional) used in the Chairman units and Delegate units. It permits up to 8 batteries to be simultaneously charged within up to 5 hours.

MAIN FEATURE
- Charges up to eight BP-900UL Lithium-ion Batteries

Power Source: 100 – 240 V AC, 50/60 Hz (supplied from AC adapter (accessory))
Current Consumption: Max. 5 A
Charging Time: Approx. 5 hours
Charging Capacity: 8 BP-900 batteries (option)
LED Indicator: Charging status (Green: Full charge, Red: On charge), Power indicator
Operating Temperature: 32°F to +104°F
Finish: Case: Steel, black, paint/Battery receptacles: PPO resin, black
Dimensions: 9.4 (W) × 2.8 (H) × 4.5 (D) in
Weight: Unit: 2.4lbs, AC adapter: 520 g
Accessory: AC adapter (Cord length: 5ft DC cord, and 6.6ft detachable AC cord) × 1

BP-900
Rechargeable Lithium-Ion Battery

The **BP-900UL** is a rechargeable lithium-ion battery designed for exclusive use with the conference units **TS-801, TS-802, TS-901** and **TS-902**.

MAIN FEATURES
LITHIUM-ION BATTERY
- For TS-801, TS-802, TS-901, TS-902 Chairperson and Delegate Stations
- Provides ten hours of chairperson/delegate station operation (speech to standby ratio - 1:2)
- Requires BC-900UL Battery Charger

Nominal Voltage: 7.4 V DC
Nominal Capacity: 1700 mAh
Operating Temperature: 32°F to +104°F
Dimensions: 2.8 (W) × 0.8 (H) × 1.5 (D) in
Weight: 95 g
Accessory: Terminal protection cover (pre-installed at the factory) × 1

AD-0910
AC Adapter

The **AD-0910UL** is an AC adapter to operate the Chairman units **TS-801** and **TS-901**, and the Delegate units **TS-802** and **TS-902**.

MAIN FEATURE
- AC Power Adapter for TS-801, TS-802, TS-901 and TS-902

Power Source: 100 – 240 V AC, 50/60 Hz
Output: 9 V DC, 1 A
Ripple Voltage: 100 mV (p-p)
Power Consumption: 400 mA AC, Input 100 V
Cord Length: 6ft
Plug: RC6705, center "+"
Operating Temperature: 32°F to +104°F
Finish: Case: PC/ABS alloy, black
Weight: 190 g
Accessory: AC power cord (6.6ft) × 1

MB-TS900
Rack Mount Bracket

Finish: Surface-treated steel plate, gray metallic, paint, semi-gloss
Dimensions: 2.6 (W) × 7 (H) × 2.4 (D) in
Weight: 680 g
Accessory: Rack mounting screw × 4, /Rack mounting washer × 4

TS-770 Series Conference Systems

The **TS-770 Series Conference System** is ideal for conferences and meetings in government, corporate, educational and hotel applications. The **TS-770** system provides communications for conferences and boardrooms. The easy to use **TS-770 Series** is comprised of the **TS-770 Central Unit** supporting up to 70 chairperson/delegate stations. TOA's **TS-770 Series Conference System** is backed with a five year product warranty.

TOA's **TS-770 Conference System** brings multiple-mode remote conferencing to the meeting room, via a standard telephone line, mobile phone or PC-based IP telephony. It provides a full range of features for ensuring clear sound for efficient and effective conferences, and at a remarkably high performance ratio.

MAIN FEATURES
TS-770, TS-771, TS-772, TS-773, TS-774, TS-775
- Easy to set up and operate
- Up to 70 Chairperson/Delegate stations per TS-770 Central Unit
- Supports system expansion up to (3) TS-770 Central Units for a total of 210 Chairperson/Delegate stations in one system
- Telephone or PC Remote Delegate station operation using the TS-775
- All Microphones ON Record function
- External source inputs and PA/record outputs
- System test function
- 5 year warranty

TS-770
Central Unit

MAIN FEATURES
- Supports up to (70) TS-771 Chairperson and TS-772 Delegate Stations
- Aux, Line and Mic inputs
- Up to six simultaneous speakers
- All mics open record function
- PA/Record output
- System test function (all mics on)
- Person speaking automatic time-out function (selectable)

Power Source: 120VAC (CU version), 50/60 Hz
Power Consumption: Max. 60W
Rated Output: 35V DC, 650mA × 2
Input: MIC: -60dB*, 600Ω, unbalanced, phone jack/
AUX: -20dB*, 600Ω, unbalanced, phone jack
Output: Recording: -20dB*, 10kΩ, unbalanced, phone jack, RCA jack × 2
Equalizer Insertion Terminals: Input: -20dB*, 10kΩ, pin jack/
Output: -20dB*, 10kΩ, pin jack
Expansion IN/OUT Terminals: Input: -20dB*, 10kΩ, pin jack × 2/
Output: -20dB*, 10kΩ, pin jack × 2/
Control: 10kΩ or more, voltage output, pin jack × 2

Control: Priority Speech chime: Operation of TS-771's priority button activates a single-tone chime/Speaker restriction: Number of simultaneously-usable TS-772s and TS-775s can be set to 1, 3, or 6/Automatic Mic-off: Function OFF/20 s/40 s (selectable)
Number of Connectable Conference Units: 70 (max. 35 units per line), Max. 210 (when 3 expansion amplifiers)
Operating Temperature: 32°F to 104°F
Operating Humidity: Under 90 % RH (no condensation)
Finish: Pre-coated steel plate, black, 30% glossy
Dimensions: 8.3 (W) × 4.2 (H) × 12.4 (D) in
Weight: 8.8lbs
Option: Extension cord: YR-770-2M, YR-770-10M

* 0dB = 1V

TS-771
Chairman Unit

Power Source: 35V DC, under 30mA (supplied from Central Unit)
Output: Headphone/Recording: 32Ω (headphone)/ 10kΩ, -20 dB* (recording), unbalanced, mini jack (with VR)/Internal speaker: 130Ω, 200mW/Contact output: 24V DC, max. 50mA
Control: Speech button: Microphone, speaker on-off control by speech switch/Priority button: Microphone and speaker on-off control, other microphone, speaker on-off, other microphone cutoff, and single-tone chime activation
Operating Temperature: 32°F to 104°F
Operating Humidity: Under 90 % RH (no condensation)
Finish: Case: ABS resin, black/
Panel: ABS resin, gray metallic, semi-gloss, paint
Dimensions: 4.5 (W) × 3.1 (H) × 6 (D)in
Weight: 780g
Option: Microphone: TS-773 (standard), TS-774 (long) (select either one)

* 0dB = 1V

MAIN FEATURES
- Requires TS-773 or TS-774 Gooseneck Microphone
- 3.5mm Headphone and record output with volume control
- Priority override control
- Built-in speaker
- Push to talk control
- Contact closure output when microphone is active

(TS-773 show is not provided with the unit.)

TS-772
Delegate Unit

Power Source: 35V DC, under 30mA (supplied from Central Unit)
Output: Headphone/Recording: 32Ω(headphone)/ 10kΩ, -20 dB* (recording), unbalanced, mini jack (with VR)/Internal speaker: 130Ω 200mW/Contact output: 24V DC, max. 50mA
Control: Microphone, speaker on-off control by speech switch
Operating Temperature: 32°F to 104°F
Operating Humidity: Under 90 % RH (no condensation)
Finish: Case: ABS resin, black/
Panel: ABS resin, gray metallic, semi-gloss, paint
Dimensions: 4.5 (W) × 3.1 (H) × 6 (D)in
Weight: 780g
Option: Microphone: TS-773 (standard), TS-774 (long) (select either one)

* 0dB = 1V

MAIN FEATURES
- Requires TS-773 or TS-774 Gooseneck Microphone
- 3.5mm Headphone and record output with volume control
- Built-in speaker
- Push to talk control
- Contact closure output when microphone is active
  - Can be used for camera call-up, tally or other devices

(TS-774 shown is not provided with the unit.)

TS-775
Remote Delegate Interface Unit

MAIN FEATURES
- Audio Input/Output for local PC connection to a remote PC participant
  - PC to PC call connection over network uses third party software/service not provided by TOA
- RJ-11 connection provided to connect with handset connector on telephone base unit for calls connected to a remote telephone participant
- Speech Mode (Selectable)
  - Auto: VOX (Voice Activated Switch)
  - Manual: Talk Key On-Off switching function
- Contact closure output when microphone is active
  - Can be used for camera call-up, tally or other devices

Power Source: 35V DC, under 30mA (supplied from Central Unit)
Input: -60dB*, 200Ω, balanced, mini phone jack with VR control
Output: -60dB*, 22Ω, balanced, mini phone jack with VR control
Speech Mode: AUTO: Voice-activated Automatic switching/**MANUAL**: Talk key on-off switching
Operating Temperature: 32°F to 104°F
Operating Humidity: 90 % or less RH (no condensation)
Finish: Pre-coated steel plate, black
Dimensions: 6.3 (W) × 1.6 (H) × 4 (D) in (excluding projection)
Weight: 700g

* 0dB = 1V

TS-773/774
Microphone

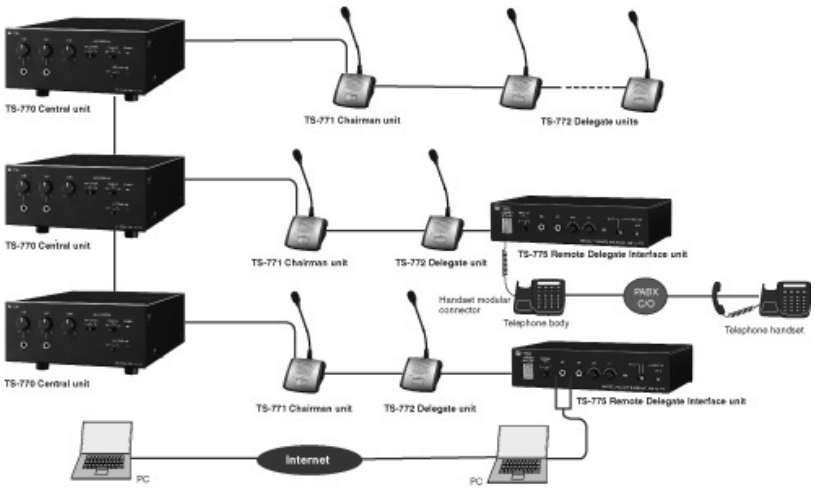
MAIN FEATURES
TS-773 (STANDARD), TS-774 (LONG) MICROPHONES
- Unidirectional - Electret condenser microphone
- Red LED ring light active speech indicator
- TS-773: 14.49" Length, TS-774: 20.39" Length
- Use with TS-771 or TS-772

TS-773 and TS-774 Microphones
Type: Electret condenser microphone
Directivity: Unidirectional
Rated Impedance: 1.8kΩ
Rated Sensitivity: -37dB (1 kHz, 0dB = 1V/Pa)
LED Indicator: Speech Indicator (ring type)
Frequency Response: 100 – 13,000 Hz
Output Connector: Combined type of XLR-4-32
Finish: Gooseneck: Stainless steel, black/ Other: ABS resin, black
Length: TS-773: 14.5in/TS-774: 20.4in
Weight: TS-773: 90g/TS-774: 105g
Applicable Unit (Option): TS-771 Chairman unit, TS-772 Delegate unit

YR-770-2M
YR-770-10M
Extension Cord

Connector: DIN socket (8P, unit's rear-mounted connector side), DIN plug (8P, unit's cord connector side)
Length: YR-770-2M: 6.6ft/YR-770-10M: 32.8ft

TS-770 Series System Image



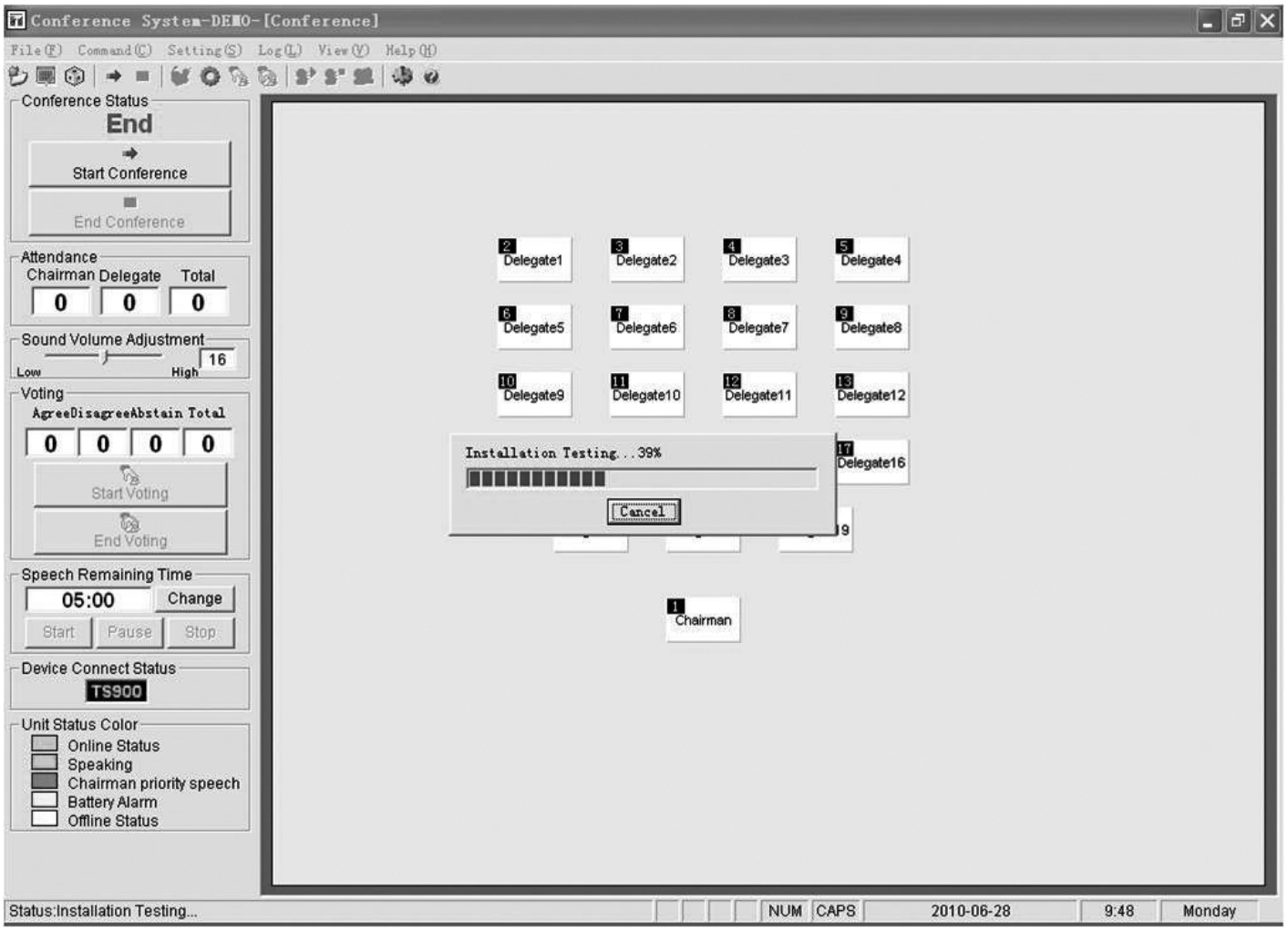
System Software for TS-800/900

MAIN FEATURES
• Configure, control, manage and personalize/customize each conference
• Assign unit ID's and member names
• Conference equipment set-up and configuration
• Conference Main Display controls and monitors meeting functions, including;start/end conference, voting and speech timer, monitor attendance and unit status (connection status, speaking, chairman priority, battery alarm)
• Record and access the conference speech and voting for later reference/review
• Conference configuration: edit and save conference settings, including; volume settings, voting settings, count down timer function, etc.
• Dual monitor viewing options (computer monitor and/or projector)

VOTING FUNCTION:
Control and assign voting functions including;
• Naming the vote
• Start and end voting
• Record logs of the vote
• Change voting options (i.e. agree, disagree, abstain)
• Option to log/record voting details, including; date/time, conference name, vote name, content and voting results (printable logs)

SPEECH FUNCTION:
Control and assign speech functions including;
• Speech mode (FIFO, LIFO, 1 fixed + LIFO)
• Assign the number of speakers at one time
• Auto microphone-off after 30 seconds of inactivity
• Speech count-down timer
• Record conference: speech log, including; date/time, speaker, content, and length of speech/conference

Software disk available by request only. Please contact TOA's Technical Support Department for more information.



Wireless Microphone Systems

UHF Wireless Systems and Optional Accessories

WM-5270
UHF Hand-held (Vocal) Wireless Microphone

MAIN FEATURES
VOCAL HANDHELD MICROPHONE
- Unidirectional, cardioid pattern
- Single AA battery, 9V (ten hours)
- Low battery indication
- Built-in antenna
- ON/OFF switch with tab prevents microphone from rolling
- Low handling noise
- Mic clip and carrying pouch included
- Compatible with receiver models: WT-5800, WT-5805, WT-5810, WT-4800, WT-5100

Microphone Element: Dynamic microphone unit: Cardioid
Frequency Range: 576 - 865MHz, UHF*[1]
Channel Selectable: 64 channels (the number of channels may differ from country to country)
RF Carrier Power: 50mW or less
Tone Frequency: 32.768kHz
Oscillator: PLL synthesizer
Maximum Input Level: 142dB SPL
Maximum Deviation: ±40kHz
Audio Frequency Response: 80Hz – 15kHz
Dynamic Range (AF Circuit): 95dB or more (with WT-5800)
Battery: AA alkaline dry cell battery
Battery Life: Approx. 10 h (when the alkaline battery is used)
Indication: Power/Battery lamp
Antenna: Built-in type
Operating Temperature: 14°F – +122°F (except battery)
Finish: Dark gray
Dimensions: 1.9 × 9.6in
Weight: 340g (with battery)

WM-5265
UHF Hand-held (Vocal) Wireless Microphone

MAIN FEATURES
HANDHELD DYNAMIC VOCAL MICROPHONE
- Unidirectional, cardioid pattern
- Dynamic mic element suitable for live vocal
- Single AA battery or NiMH battery (ten hours)
- Charging contacts on bottom of microphone barrel for compatibility with optional charging stations
- Accepts optional WB-5000-2 NiMH rechargeable batteries
- Low battery indication
- Built-in antenna
- ON/OFF switch with tab prevents microphone from rolling
- Low handling noise
- Mic clip and carrying pouch included
- Compatible with receiver models: WT-5800, WT-5805, WT-5810, WT-4820, WT-5100

Microphone Element: Dynamic microphone unit: Unidirectional
Frequency Range: 576 – 865MHz, UHF*[1]
Channel Selectable: 64 channels (the number of channels may differ from country to country)
RF Carrier Power: 50mW or less
Tone Frequency: 32.768kHz
Oscillator: PLL synthesizer
Maximum Input Level: 132dB SPL
Maximum Deviation: ±40kHz
Audio Frequency Response: 100Hz – 15kHz
Dynamic Range (AF Circuit): 95dB or more (with WT-5800)
Battery: WB-2000 rechargeable battery (0ption) or AA alkaline dry cell battery
Battery Life: Approx. 13 h (when the WB-2000 rechargeable battery is used)
Approx. 10 h (when the alkaline battery is used)
Indication: Power/Battery indicator
Antenna: Built-in type
Operating Temperature: 14°F – +122°F (except battery)
Finish: Resin, coating
Dimensions: 2 × 9in
Weight: 205g (with battery)

WM-5225
UHF Hand-held (Speech) Wireless Microphone

MAIN FEATURES
SPEECH HANDHELD MICROPHONE
- Unidirectional, cardioid pattern
- ON/OFF switch with tab prevents microphone from rolling
- Single AA alkline or NiMH battery (ten hours)
- Rechargable with option battery charging status
- Low battery indication
- Built-in antenna
- Mic clip and carrying pouch incl.
- Compatible with receiver models: WT-5800, WT-5805 (Bank A), WT-5810, WT-4820, WT-5100

Microphone Element: Dynamic microphone unit: Unidirectional
Frequency Range: 576 – 932MHz, UHF*[1]
Channel Selectable: 64 channels (the number of channels may differ from country to country)
RF Carrier Power: 50mW or less
Tone Frequency: 32.768kHz
Oscillator: PLL synthesizer
Maximum Input Level: 126dB SPL
Maximum Deviation: ±40kHz
Audio Frequency Response: 100Hz – 15kHz
Dynamic Range: 95dB or more (with WT-5800)
Battery: WB-2000 rechargeable battery (option) or AA alkaline dry cell battery
Battery Life: Approx. 13 h (when the WB-2000 rechargeable battery is used)
Approx. 10 h (when the alkaline battery is used)
Indication: Power/Battery indicator
Antenna: Built-in type
Operating Temperature: 14°F – +122°F (except battery)
Finish: Resin, coating
Dimensions: 1.7 × 9.1in
Weight: 180g (with battery)

WM-5325
UHF Wireless Transmitter

MAIN FEATURES
WIRELESS BODYPACK TRANSMITTER
- Lightweight bodypack
- Rechargable with option battery charging status
- Optional:
  - WH-4000A/H: Headset Mics
  - YP-M5310: Omnidirectional Mic
  - YP-M5300: Unidirectional Mic
- Single AA alkline or NiMH battery (ten hours)
- Low battery indication
- Screw-on 0.1" (3.5mm) mini-plug connector
- Adjustable mic. sensitivity
- Built-in concealed antenna
- Mic clip-not, neck strap and carrying pouch
- Compatible with receiver models: WT-5800, WT-5805, WT-5810, WT-4820

Frequency Range: 576 – 932MHz, UHF*[1]
Channel Selectable: 64 channels (the number of channels may differ from country to country)
RF Carrier Power: 50mW or less
Tone Frequency: 32.768kHz
Oscillator: PLL synthesizer
Maximum Input Level: -14dB to -29dB* (Audio level control: Min. to Max.)
Maximum Deviation: ±40kHz
Audio Frequency Response: 100Hz – 15kHz
Dynamic Range (AF Circuit): 95dB or more (with WT-5800)
Battery: WB-2000 rechargeable battery (0ption) or AA alkaline dry cell battery
Battery Life: Approx. 13 h (when the WB-2000 rechargeable battery is used)
Approx. 10 h (when the alkaline battery is used)
Indication: Power/Battery indicator
Antenna: Built-in type
Connector: 3.5mm mini plug
Operating Temperature: 14°F – +122°F (except battery)
Finish: Resin, coating
Dimensions: 2.4 (W) × 4 (H) × 0.9 (D)in
Weight: 90g (with battery)

*[1] Frequency range dependent on individual country regulatory codes.
*[2] 0dB = 1 V

YP-M5300
Unidirectional Lavalier Microphone

Type: Electret condense type
Directivity: Unidirectional
Sensitivity: -63dB ±3dB (0dB = 1V/0.1 Pa, 1kHz)
Frequency Response: 100Hz – 12kHz
Maximum Input Level: 120dB SPL
Cord Length: 4.3ft
Connector: 3.5mm mini plug
Finish: Dark black
Weight: 20g (cable included)

WH-4000H
Headset Microphone

Type: Electret condense type
Directivity: Unidirectional
Sensitivity: -66dB ±3dB (0dB = 1V/0.1 Pa, 1kHz)
Maximum Input Level: 120dB SPL
Cord Length: 4.3ft
Connector: 3.5mm mini plug
Finish: Frame: Stainless, black (silicon rubber)
Gooseneck: Iron, chrome-plated, black (shrink tube)
Weight: 50g (cable included)

YP-E401
Ear-Suspension Earphone

Type: Dynamic type
Impedance: 16Ω
Frequency Response: 300Hz – 15kHz
Rated Sensitivity: 88dB (0dB = 2 x 10^{-5} Pa, 10mW)
Input: Max. 50mW
Terminal: 3.5mm mini plug (3-pole)
Finish: Black
Weight: 17g
Accessory: Ear-pad × 1, Suspension ring* × 22

* Three different sizes are available for the suspension ring.
L: 68 × 47 mm / M: 64 × 45 mm / S: 60 × 43 mm

WH-4000P
Waist Pouch

YP-M5310
Omni-directional Lavalier Microphone

Type: Electret condense type
Directivity: Omnidirectional
Sensitivity: -64dB ±3dB (0dB = 1V/0.1 Pa, 1kHz)
Frequency Response: 100Hz – 15kHz
Maximum Input Level: 110dB SPL
Cord Length: 4.3ft
Connector: 3.5mm mini plug
Finish: Dark black
Weight: 20g (cable included)

WH-4000A
Headset Microphone

Type: Electret condense type
Directivity: Unidirectional
Sensitivity: -66dB ±3dB (0dB = 1V/0.1 Pa, 1kHz)
Maximum Input Level: 120dB SPL
Cord Length: 4.3ft
Connector: 3.5mm mini plug
Finish: Headband: EVA, black
Frame: Stainless, black (silicon rubber)
Gooseneck: Iron, chrome-plated, black (shrink tube)
Weight: 50g (cable included)

YP-E5000
Assist Earphone

Type: Dynamic type
Impedance: 16Ω
Frequency Response: 300Hz – 15kHz
Rated Sensitivity: 88dB (0dB = 2 x 10^{-5} Pa, 10mW)
Input: Max. 50mW
Terminal: 3.5mm mini plug (3-pole)
Finish: Black
Weight: 17g
Accessory: Ear-pad × 1, Suspension ring* × 2

* Three different sizes are available for the suspension ring.
L: 68 × 47 mm / M: 64 × 45 mm / S: 60 × 43 mm

WH-4000S
Windscreen

Q-EM-77
Single Ear Microphone

The **Q-EM-77** is a high quality single over-the-ear microphone consisting of an electret transducer capsule exhibitng an omni-directional characteristic. Because of its lightweight construction, it allows the user complete freedom of movement making.

Polar Pattern: Omni-directional
Transducer Type: Electret condenser
Operating Voltage: 1.5 - 10 volts min/max
Sensativity: 5mV/Pa +/-3dB
Frequency Response: 20Hz - 20KHz ±3dB
Color: Beige
Connector: 3.5mm Connector

WT-5100
UHF Portable Receiver

MAIN FEATURES
- Portable UHF tuner suitable for assisted listening
- Rechargeable with optional chargers & batteries
- Tunable to any of 16 UHF channels
- Compatible with 5000 Series transmitters
- 1/8" headphone output for optional earphones

WTU-4800
UHF Wireless Tuner Unit

MAIN FEATURES
UHF Wireless Tuner/Receiver Module
- Wireless receiver module for WT-4820 Modular Dual Channel Wireless Receiver Microphone
- Employs a compressor-expander system noise reduction circuit to minimize the influence of ambient RF noise
- 16 channels

WT-4820
UHF Wireless Tuner

MAIN FEATURES
Wireless Microphone Receiver
- Modular dual channel wireless mic. receiver
- Compact, up to Two wireless channels in a half-rack space
- Two Module slots for WTU-4800 Diversity Receiver Modules *(WTU-4800 required)*
- Two detachable antennas

	WT-5100	WT-5800	WT-5805	WT-5810	WT-4820	WTU-4800
Power Source	LR-6(AA)	AC mains (supplied AC adapter must be used)				7 - 12 V DC
Channel Selectable	16 channels (selectable)	64 selectable frequencies*1		16 channels		
Receiving System	Double super-heterodyne	Double super-heterodyne			--	Double super-heterodyne
Diversity System	Space Diversity	Space Diversity (True diversity)	Space diversity	Space diversity	--	Space diversity
Mixing Output	4mW, 16Ω, 3.5mm mini plug	MIC: -60 dB*2, 600Ω, balanced, XLR-3-32 type connector LINE: -20 dB*2, 600Ω, unbalanced, phone jack			--	--
Mixing Input	--	-20 db*2, 10 kΩ, unbalanced, phone jack				--
Antenna	--	Whip antenna		Rod antenna	Whip antenna	--
Antenna Input	--	75 Ω, BNC (phantom powering for antenna), 9 V DC, 30 mA (max)		--	75 Ω, BNC (phantom powering for antenna), 9 V DC, 30 mA (max)	--
Antenna Output	--	75 Ω, BNC (Gain 0 dB)	--	--	75 Ω, BNC (Gain 0 dB)	--
Receiving Sensitivity	12dB, SINAD (less than 3dBμV)	Over 90 dB, S/N ratio (20 dBμ V input, 40 kHz deviation)			--	Better than 80 dB, S/N ratio (20 dBμ V input, 40 kHz deviation)
Squelch Sensitivity	--	18 - 40 dBμ V variable			--	18 dBu V
Tone Frequency	--	32.768 kHz			--	--
S/N Ratio	--	Over 110 dB (A-weight, unbalanced output)		Over 104 dB (A-weight, unbalanced output)		Over 102 dB (A-weight, balanced output)
Harmonic Distortion	--	Under 1% (typical)				
Frequency Response	200 - 5,000Hz, -3dB	100 - 15,000 Hz, ±3 dB			50 - 18,000 Hz, ±3 dB	100 - 12,000 Hz, ±3dB
Finish	Resin, dark silver	Resin, black				Tin plated steel
Dimensions	2.44"(W) x 6.44"(H) x 1.28"(D), 62(W) x 163.6(H) x 32.5(D)mm	8.27" (W) x 1.73" (H) x 8.07" (D) 210 (W) x 44 (H) x 205.1 (D) mm		8.11" (W) x 1.6" (H) x 6.01" (D) 206 (W) x 40.6 (H) x 152.7 (D) mm	8.27" (W) x 1.73" (H) x 7.13" (D) 210 (W) x 44 (H) x 181 (D) mm	2.36" (W) x 0.98" (H) x 5.47" (D) 60 (W) x 25 (H) x 139 (D) mm
Weight	0.35lbs(160g) including battery	1.54lbs (700g)		1.3lbs (590g)	1.7lbs (770g)	0.29lbs (130g)

WT-5800
UHF Wireless Tuner

MAIN FEATURES
True Diversity Receiver
- Compact half-rack size
- Scanner function
- Transmitter battery status display
- True diversity reception
- Two detachable antennas
- 64 selectable channels

WT-5805
UHF Wireless Tuner

MAIN FEATURES
Space Diversity Receiver
- Compact half-rack size
- Scanner function
- Transmitter battery status display
- TOA Space diversity reception
- Antenna loop outputs not included
- 64 selectable channels

WT-5810
UHF Wireless Tuner

MAIN FEATURES
Space Diversity Receiver
- Compact design for shelf-mount applications
- Scanner function
- Transmitter battery status display
- TOA Space diversity reception
- 16 selectable channels

(Note: Cannot use an external antenna)

WD-4800
Antenna Distributor

Power Source: 230V (120V/230V selectable)
Power Consumption: 25W
Frequency Range: VHF/UHF
Antenna Input: 2 input (front × 1, rear × 1), 75Ω, BNC (phantom powering for antenna)
Antenna Output: 4 output, 75Ω, BNC
DC Power Supply: 4 output, (each output: 13V DC/250mA)
Indication: Power
Operating Temperature: 14°F to +122°F
Finish: Steel, coating
Dimensions: 16.5 (W) × 1.7 (H) × 12 (D)in
Weight: 7.7lbs
Accessory: DC cable × 4
Option: Rack mounting bracket: MB-15B

YW-4500
UHF Wireless Antenna

- Dipole ratio relative gain: more than 8dB
- Wall-mountable

Power Source: 7 – 12V DC (supplied from amplifier or tuner)
Current Consumption: 15mA or less
Receiving Frequency: 550 – 880MHz, UHF
Dipole Ratio Relative Gain: 8dB or more (780MHz)
V.S.W.R: 3.0 or less
Output Impedance: 75Ω
Mounting Hole Pitch: 83.5mm (dimensions for wiring box)
Operating Temperature: 14°F to +122°F
Finish: ABS resin, off-white
Dimensions: 4.1 (W) × 5.5 (H) × 5 (D)in
Weight: 270g
Accessory: M3.5 screw for wiring box × 2, Tapping screw (M4) for wooden wall × 2, RG-6/U or RG-11U sleeve × 1

BC-5000-2PS
Battery Charger

Power Source: 12 V DC (optional AC adapter AD-5000-2 must be used)
Power Consumption: 700mA
Charging Time: Max. 3 hours
Number of wireless microphones to be charged simultaneously: 2 pieces
Operating Temperature: 32°F to +104°F
Operating Humidity: 30% to 85% RH
Finish: Case: ABS resin, metallic gray/ Microphone receptacle section: PPE resin, black
Dimensions: 9.4 (W) × 4.1 (H) × 3.9 (D)in
Weight: 500g (with mounting adapters attached)
Accessory: Mounting adapter × 2
Option: Rechargeable battery: WB-2000-2 (containing 2 pieces)

BC-5000-6PS
Battery Charger

Power Source: 12 V DC (optional AC adapter AD-5000-6 must be used)
Power Consumption: 2.2A
Charging Time: Max. 3 hours
Number of wireless microphones to be charged simultaneously: 6 pieces
Operating Temperature: 32°F to +104°F
Operating Humidity: 30% to 85% RH
Finish: Case: Steel plate, black, paint/ Microphone receptacle section: PPE resin, black
Dimensions: 15.4 (W) × 4.6 (H) × 5.2 (D)in
Weight: 4.4lbs (with mounting adapters attached)
Accessory: Mounting adapter × 6
Option: Rechargeable battery: WB-2000-2 (containing 2 pieces)

BC-5000-12PS
Battery Charger

Power Source: 12 V DC (optional AC adapter AD-5000-6 must be used)
Power Consumption: 4.4A
Charging Time: Max. 3 hours
Number of wireless microphones to be charged simultaneously: 12 pieces
Operating Temperature: 32°F to +104°F
Operating Humidity: 30% to 85% RH
Finish: Case: Steel plate, black, paint/ Microphone receptacle section: PPE resin, black
Dimensions: 15.4 (W) × 4.6 (H) × 9.7 (D)in
Weight: 7.5lbs (with mounting adapters attached)
Accessory: Mounting adapter × 12
Option: Rechargeable battery: WB-2000-2 (containing 2 pieces)

AD-5000-2
AC Adapter

Power Source: 100 – 240V AC, 47 – 63Hz, 1A
Output: 12V DC, 2A
Ripple Voltage: 120mV p-p
Cord Length: 5.9ft
Plug: Type of plug differs depending on the country where the unit is used
Operating Temperature: 32°F to +104°F
Finish: Case: PC/ABS alloy, black
Weight: 175g
Accessory: Power cord (6.6ft) × 1

AD-5000-6
AC Adapter

Power Source: 100 – 240V AC, 47 – 63Hz, 1A
Output: 12V DC, 5A
Ripple Voltage: 120mV p-p
Cord Length: 5.9ft
Plug: Type of plug differs depending on the country where the unit is used
Operating Temperature: 32°F to +104°F
Finish: Case: PC/ABS alloy, black
Weight: 300g
Accessory: Power cord (6.6ft) × 1

WB-2000-2
Rechargeable Battery

Nominal Voltage: 1.2V DC
Capacity: 1900mAh (rated), 2000mAh (typical)
Operating Temperature: 32°F to +104°F
Operating Humidity: 30% to 85% RH
Dimensions: 0.6 × 2 in
Weight: 30g (per piece)

*1 Frequency range dependent on individual country regulatory codes.
*2 0dB = 1 V

Wireless Meeting Amplifiers

WA-1822
Wireless Meeting Amplifier

WA-1822C
Cassette-Equipped Wireless Meeting Amplifier

Power Source: L version: 120V /H version: 230V AC or Dry cells-8 pcs. (R20P or D size)
Power Consumption: UK,H: AC: 44W (rated output)/ LT, L: AC: 43W (rated output)
Rated Output: AC: 20W (Max. 40W with EXT SP.)/ DC: 8W
Battery Life: Dry cell battery: Approx. 12 (WA-1822) hours (WA-1822C 6 hours)
Frequency Response: 70Hz – 10kHz (deviation 3dB)
Distortion: Under 10% (rated output)
Input: Wired mic: -48dB*, 600Ω / AUX: -20dB*, 10kΩ
Output: External Speaker: 8 – 16Ω/over 20W of rated input "Internal speaker and external speaker "or" external speaker only" (selectable) / Line/Rec.: -10dB*, 1kΩ
S/N Ratio: Over 70dB (rated output)
Antenna: Rod antenna
Internal Speaker: 20cm full range speaker + tweeter
Operation Temperature: AC: 14°F to +122°F/ DC: 32°F to +104°F
Finish: ABS resin, light gray
Dimensions: 11.7 (W) × 18.1 (H) × 7.9 (D)in
Weight: WA-1822**:** 13.2lbs / WA-1822C: 14.8lbs
Accessory: Power cord (6.6ft) × 1, Dust cover × 1, Screwdriver × 1
Option: UHF Wireless Tuner Unit: WTU-4800

Cassette Deck Section (WA-1822C only)
Reproduction System: Auto-reverse
Track System: 2-track/1 channel (monaural)
Usable Tape: Normal tape
Recording Method: AC bias
Erasing Method: AC erasure
Tape Speed: 4.8cm/sec
Wow and flutter: 0.2% WRMS
Fast Forward/Rewind Time: Approx. 130 sec. (C-60 tape)

* 0dB = 1V

UHF Wireless Microphone and Tuner Combination Sets

5000 Series Wireless Microphone Sets

WS-5225
UHF Hand-held Wireless Microphone/Tuner Set
WM-5225 + WT-5810

WS-5265
UHF Hand-held Wireless Microphone/Tuner Set
WM-5265 + WT-5810

WS-5325U
UHF Lavaliere Wireless Microphone/Tuner Set
WM-5325 + YP-M5300 + WT-5810

WS-5325M
UHF Lavaliere Wireless Microphone/Tuner Set
WM-5325 + YP-M5310 + WT-5810

WS-5325H
UHF Headset Wireless Microphone/Tuner Set
WM-5325 + WH-4000H + WT-5810

Trantec Wireless S4.16 Series

The new **Trantec S4.16 Series** is the evolution of the old TOA WS-200 & 300 “Passport” Series. The new systems provide better sonic performance, greater frequency agility and allow for use of more simultaneous channels. Offering reliable true diversity reception, they combine years of Trantec’s expertise in development of wireless systems (used in BBC broadcast & in West-end London theaters, as well as on tour with major artists), with TOA’s renowned sonic performance and reliability. Designed to fit the needs of budget-conscious facilities such as schools, churches and private organizations, the **S4.16 Series** does not sacrifice performance or reliability. The **Trantec S4.16 Series** carries the standard TOA audio products 5 year warranty, so you know it’s built to last.

Q-S4.16H

Q-S4.16L

MAIN FEATURES

- Compact design for easy transport, installation and storage.
- 16 selectable UHF Channels within the 616-630mHz range, with simultaneous operation of 8 systems. Allows operational flexibility for larger events.
- 10 hours of transmitter battery life with 1 x 9V Alakline battery.
- Hand Held Mic transmitter incorporates dynamic cardioid (uni-directional) element, for hi-quality sound with minimal gain-before-feedback. Internal (battery compartment) frequency selection and external on/off switch with LED indicator.
- Body-pack transmitter incorporates mini lavalier omni-directional condenser mic (by AVLeader™) for comfort, convenience and low visibility with sonic detail and sensitivity. Removable via screw-on 1/8” mini-jack for easy storage and replacement. Internal (battery compartment) frequency selection, with input select (lav/Instrument) & sensitivity adjustment to accommodate different signal levels. External -on/off switch and LED battery life status indicator.
- Tuner is equipped with Balanced XLR (switchable Mic/Line level) and ¼” unbalanced outputs to allow for flexible connectivity.
- Detachable ½ wave UHF antennas may be remotely mounted for improved reception.
- 4-segment UHF signal strength and diversity A/B reception indicators for convenient visual monitoring of RF performance
- 10mW transmitter RF output strength for clear reception up to 120’ with minimal crosstalk and IM interference between channels
- General Specifications:
  - 50Hz-16kHz frequency response
  - >96dB S/N Ratio
- 5-Year warranty

Receiver	S4.16
RF Frequency Range	616-630MHz
Channel Selectable	16
Audio Frequency Response	Handheld 80Hz-16kHz (+/-3dB), Belt pack 60Hz-16kHz (+/-3dB)
Audio S/N Ratio	>96dBA
Audio output	Variable to +10dBu via unbalanced 1/4” mono jack, +16 dBu via balanced XLR 3F
Display	4 position RF bar graph, AF Peak (Overload), Diversity A/B
DC Input	12V, 100mA
Dimensions	1.38” x 8.39” x 3.86” (35 x 213 x 98mm)
Weight	1.28lbs (580g)

Transmitters	S4.16L	S4.16H
Channel Selectable	16	16
Controls	Frequency select, On/Off switch, Lapel/Instrument select, Gain adjust	Frequency select and On/Off switch
Indicator	Battery status LED	
LP2 Lavalier microphone	Omni-directional back electret condenser	High quality cardioid dynamic head
Operating voltage	9v @ <50mA	
Operating time	10 hours	
Power Output	Max 10mW	
Connectors	Audio input via 3.5mm jack socket	-
Dimensions	2.36” x 3.94” x 1.18” 60 x 100 x 30mm including belt clip	11” x 2” 280 x 50mm max (including grille)
Weight	0.2lbs (90g)	0.5lbs (210g)
Fully meets with requirements of ETSI 300-422/455, FCC part 74h		

Wireless Microphone Selection Guide

5000 Series UHF Wireless Selection Guide			
DESCRIPTION	**PRODUCT CODE**	**COMPATIBLE WITH**	**FREQUENCY BAND**
Please add the frequency band designation to the end of the part number. i.e. WM-5270 E01			
HANDHELD WIRELESS MICROPHONES			
Handheld Microphone, Vocal	WM-5270	WT-5800, WT-5805, WT-5810, WT-4820*/WTU-4800	E01, F01, G02, H01
Handheld Microphone, Speech	WM-5225		
Handheld Microphone, Speech	WM-5265		
WIRELESS MICROPHONES WITH BELTPACK			
Lapel Microphone with Beltpack, Speech	WM-5325	WT-5800, WT-5805, WT-5810, WT-4820*/WTU-4800	E01, F01, G02, H01
OPTIONAL ACCESSORY MICROPHONES			
Aerobic Headset only Microphone	WH-4000A	WM-5325	N/A
Vocal Headset only Microphone	WH-4000H	WM-5325	
Uni-directional Lavalier Mic	YP-M5300	WM-5325	
Omni-directional Lavalier Mic	YP-M5310	WM-5325	
Replacement Windscreen	WH-4000S	WM-5325	
WIRELESS RECEIVERS			
Receiver	WT-5100	WM-5270, WM-5225, WM-5265, WM-5325	E01, F01, G02, H01
True Diversity Receiver	WT-5800		
Space Diversity Receiver	WT-5805		
Space Diversity Receiver	WT-5810		
Wireless Microphone Frame	WT-4820*		N/A
UHF Wireless Tuner Unit (Module for WT-4820)	WTU-4800*		E01, F01, G02, H01
OPTIONAL ACCESSORIES FOR RECEIVERS			
Power Antenna Distributor	WD-4800	WT-5800, WT-5805, WT-4820	N/A
UHF Wireless Antenna	YW-4500	WT-5800, WT-5805, WT-4820, WTU-4800	
Rack mount for single (1RU)	MB-WT3	WT-5800, WT-5805, WT-4820	
Rack mount for dual (1RU)	MB-WT4	WT-5800, WT-5805, WT-4820	
Rack mount kit	MB-15B	WD-4800	
WIRELESS MICROPHONE KITS *(Includes Microphone and Receiver)*			
Handheld Kit containing WM-5225 and WT-5810	WS-5225	N/A	E01, F01, G02, H01
Handheld Kit containing WM-5265 and WT-5810	WS-5265		
Lavaliere Kit containing WM-5325 and WT-5810	WS-5325		
Headset Kit containing WM-5325H and WT-5810	WS-5325H		
Headset Kit containing WM-5325M and WT-5810	WS-5325M		
Headset Kit containing WM-5325U and WT-5810	WS-5325U		

FREQUENCY BAND SELECTION

Please note: To be compatible, the Microphone and Receiver must have the same frequency band designation.
i.e. WT-5800 **E01** and WM-5270 **E01**.

***On bank 1 only.**

TOA UHF Frequency Bands:
E01: 668 - 698 MHz
F01: 636 - 666 MHz
G02: 614-636 MHz
H01: 576-606 MHz

Infrared Wireless Microphone Systems

TOA's **Infrared Wireless Microphone System** incorporates a range of conference and communication enhancing features that will appeal to users who want confidentiality as well as interference-free communication. Because the microphones use infrared signals, sensitive matters being discussed in a meeting room won't leave the room, and the wireless microphones can be used in several adjacent classrooms simultaneously without interference. TOA's **Infrared Wireless Microphones** are ideal for educational and business environments.

IR-200M
Infrared Hand-held Wireless Microphone

MAIN FEATURES
- Designed for stable voice transmission, thanks to two infrared emitters which are carefully positioned on the microphone body helping to prevent the emitters from being accidentally covered by a hand when holding the microphone.
- Lightweight body keeps hands from tiring even during long hours of use
- Infrared light emission intensity is adjustable at 2 levels
- Two selectable channel frequencies
- Antibacterial treatment
- Employs an electret condenser microphone unit
- Low-battery indicator
- Color stickers supplied to distinguish between each unit

IR-300M
Infrared Hands-free Wireless Microphone

MAIN FEATURES
- Easy-to-wear, neck-suspended design
- Lightweight body can be worn for long periods of time without causing fatigue
- Infrared light emission intensity adjustable at 2 levels
- 2 selectable channel frequencies
- Antibacterial treatment
- Employs an electret condenser microphone unit
- Low-battery indicator
- Can be used with built-in or external microphone
- External MIC input level adjustment function allows sensitivity adjustment if the connected external microphone has a different sensitivity
- Color stickers (labels) supplied to distinguish between each unit

		IR-200M	IR-300M
Battery		IR-200BT-2 rechargeable battery for the infrared wireless microphone (2 pieces) or AA alkaline dry cell battery (2 pieces).	
Current Consumption		Typ. 250 mA (2.4 V, power selector switch: N); Typ. 340 mA (2.4 V, power selector switch: N)	
Infrared Emitter	Wavelength	870 nm (AM: Brightness modulation)	
	Modulation Method	Frequency modulation	
	Carrier Frequency	Channel A: 3.100 MHz; Channel B: 3.350 MHz	
	Transmission Distance	Approx. 65ft (20m) (Power selector switch: H in an unobstructed space) Approx. 50ft (15m) (Power selector switch: N in an unobstructed space)	
Tone Signal		32.768 kHz	
Modulation Sensitivity		±4.8 kHz (1 kHz, when SPL of 84 dB is input)	
Maximum Input Sound Pressure		120 dB SPL	
Input Sensitivity Adjustment		--	Adjustment range: -9 dB to 0 dB (factory preset: 0 dB)
Microphone Unit		Unidirectional electret condenser microphone	
Frequency Response		100 Hz - 12 kHz	
Pre-emphasis		300 µs	
Input		--	External microphone input (3.5 monaural mini jack)
Battery Operation Time		Approx. 8 h (when the IR-200BT rechargeable battery for the infrared wireless microphone is used power selector switch: N) Approx. 6 h (when the alkaline battery is used power selector switch: N)	
Operating Temperature		0°C to +40°C (32°F to 104°F)	
Operating Humidity		30% to 85% RH	
Finish		Control section: ABS resin, metallic gray, 50% gloss, paint; Filter section: Polycarbonate, optical cut filter	
Dimensions		1.46" × 9.52" / 37 × 241.8 (H) mm	2.52" (W) × 3.59" (H) × 1.07" (D)/64(W) × 91.3(H) × 27.3(D)mm
Weight		0.37lbs (170g) (with battery)	0.29lbs (130g) (with battery and strap)
Accessory		Screw driver (for setting) x 1, Color label (6 colours) x 1	

IR-200BC
Battery Charger

MAIN FEATURES
- Capable of charging up to 2 microphones at a time (both hand-held and hands-free types)
- With rapid charging feature, up to 2 infrared microphones can be simultaneously charged in 3 hours (maximum)
- Charge status indicator

Power Source: AC mains 50/60Hz (supplied from the accessory AC adaptor*[1])
Current Consumption: Max. 2A
Charging Time: Max. 3 hours
Number of wireless microphones to be charged simultaneously: 2 pieces*[2]
Operating Temperature: 32°F to +104°F
Operating Humidity: 30% to 85% RH
Finish: Case: ABS resin, metallic gray, 50% gloss, paint/ Microphone receptacle section: PPE resin, black
Dimensions: 9.4 (W) × 3.3 (H*[2]) × 3.9 (D)in
Weight: 635g (unit only, including mounting adapter (accessory))
Accessory: AC adaptor (DC cord length; 5.9ft) × 1, Power cord (6.6ft) × 1, Mounting adapter (pre-installed on the unit) × 2

*[1] Not supplied with the IR-200BC (KR). For the usable power supply cord and AC adapter, contact your nearest TOA dealer.
*[2] Using the mounting adapter allows one each of the IR-200M and IR-300M to be charged in combination.
Note that nickel metal hydride (Ni-MH) batteries other that the dedicated battery IR-200BT cannot be charged.

IR-700D
Infrared Wireless Distributor

MAIN FEATURES
- Equipped with 4 receiver mixing outputs and 2 distribution outputs
- By using the IR-700D in conjunction with IR-702T and YW-1022Y/ YW-1024Y, a system with up to 16 infrared receivers can be configurable
- Rack-mountable with optional brackets (MB-WT3/MB-WT4)

Power Source: AC mains 50/60Hz (supplied from the accessory AC adaptor)
Power Consumption: 25W or less
Input/Output: 4 mixing inputs, 2 distribution outputs
Band-Pass Frequency: 3.0 – 6.0MHz
Infrared Receiver Input: 75 ohms, BNC jack × 4 (Infrared wireless receiver's power source: 24V DC, 800mA max. in total of 4 terminal)
Distribution Output: 75 ohms, BNC jack
Operating Temperature: -10°C to +50°C
Operating Humidity: 30% to 85% RH
Finish: Case: ABS resin, black
Dimensions: 210 (W) × 44 (H) × 200.9 (D)mm
Weight: 640g (unit itself)
Accessory: AC adaptor × 1, BNC plug-to-BNC plug cord (50cm) × 2, Rubber foot × 4

IR-702T
Infrared Wireless Tuner

MAIN FEATURES
- Comes with a built-in 2-channel fixed-frequency tuner
- Enables installation of up to 4 infrared light receivers per unit
- Equipped with signal reception light and knob for microphone volume control
- Two line outputs, one with a MIX output switch allowing output of mixed voices from channels A and B
- Rack-mountable with optional brackets (MB-WT3, MB-WT4)

Power Source: AC mains 50/60Hz (supplied from the accessory AC adaptor)
Power Consumption: 15W or less
Receiving Frequency: Channel A: 3.100MHz/Channel B: 3.350MHz
Receiver Sensitivity: S/N ratio: 50dB or more (40dBμV input, 1 kHz modulation, ±4.8 kHz deviation)
S/N Ratio: 61dB or more (60dBμV input, ±4.8 kHz deviation, A-weighted)
Tone Squelch Frequency: 32.768kHz
Infrared Receiver Input: 75Ω, BNC jack × 2 (Infrared wireless receiver's power source: 24V DC, max. 220mA max. total 2 terminals)
Number of Connectable Conference Receiver:
4 (YW-1022/YW-1024)/16 (YW-1024 × 4)
Output: Channel A and B: -10 dB* (±4.8kHz deviation, at volume level max.), 600Ω, electronically balanced, 3 pole phone jack
Note: Channel A switchable to mixer output
Frequency Response: 100Hz – 12kHz
Operating Temperature: 14°F to +122°F
Operating Humidity: 30% to 85% RH (no condition)
Finish: Case: ABS resin, black
Dimensions: 8.3 (W) × 1.7 (H) × 8.3 (D)in
Weight: 630g (unit itself)
Accessory: AC adaptor × 1, Power cord (6.6ft) × 1, Cord with a phone plug (3.3ft) × 1, Color label (6 colors) × 1, Rubber foot × 4
Option: Mounting bracket kit: MB-WT3, MB-WT4

*0db = 1V

YW-1024
Distributor

Frequency Range: 1.6 – 1,000 MHz (excluding 50 – 70 MHz)
Distribution Loss: 8.5dB ±3dB (between the Mixing and each Distribution terminals)
Input/Output Impedance: 75Ω
Coaxial Connector: Mixing terminal: BNC jack, power passing type (under 30 V DC, under 2 A)/ Distribution 1 – 4 terminals: BNC jack, power passing type (under 30 V DC, under 1 A)
Operation Temperature: 14°F to +122°F
Finish: ABS resin, gray
Dimensions: 3 (W) × 4.8 (H) × 1.3 (D) in
Weight: 120 g

YW-1022
Distributor

Frequency Range: 1.6 – 1,000 MHz (excluding 50 – 70 MHz)
Distribution Loss: 4.5 dB ±3 dB (between the Mixing and each Distribution terminals)
Input/Output Impedance: 75 ohms
Coaxial Connector: Mixing terminal: BNC jack, power passing type (under 30 V DC, under 2 A)/ Distribution 1 and 2 terminals: BNC jack, power passing type (under 30 V DC, under 1 A)
Operation Temperature: 14°F to +122°F
Finish: ABS resin, gray
Dimensions: 3 (W) × 4.8 (H) × 1.3 (D) in
Weight: 105 g

Q-EM-77
Single Ear Microphone

The **Q-EM-77** is a high quality single over-the-ear microphone consisting of an electret transducer capsule exhibitng an omni-directional characteristic. Because of its lightweight construction, it allows the user complete freedom of movement making.

Polar Pattern: Omni-directional
Transducer Type: Electret condenser
Operating Voltage: 1.5 - 10 volts min/max
Sensativity: 5mV/Pa +/-3dB
Frequency Response: 20Hz - 20KHz ±3dB
Color: Beige
Connector: 3.5mm Connector

IR-200BT
Ni-MH Battery

Nominal Voltage: 1.2V DC
Nominal Capacity: Min. 2300mAh
Operating Temperature: 32°F to +104°F
Operating Humidity: 30% to 85% RH
Dimensions: 0.6 × 2 in
Weight: 30g

IR-500R
Infrared Wireless Receiver

MAIN FEATURES
WALL-MOUNT RECEIVER
- Supplied wall-mounting brackets
- Can be installed in an electric circuit box
- Equipped with power indicator LED
- Reception area is approx. 50ft line of sight*
- Infrared light reception angle can be changed

*In a space without any obstacles.

Power Source: 24V DC (supplied from the IR-702T)
Current Consumption: Max, 40mA
Infrared Detector
Wavelength: 870nm
Carrier Frequency: Channel A: 3.100MHz/ Channel B: 3.350MHz
Acceptance Angle: Vertical: 80° (up to 30° movable downward)/
Horizontal: 80° (up to 30° movable left or right)
Communication Area: Approx. 15m in a space without any obstacles

Connection Terminal: 75Ω, BNC jack
Operating Temperature: 32°F to +104°F
Operating Humidity: 30% to 80% RH
Finish: Case: Polycarbonate resin, visible light cut filter/Base: ABS resin, off-white
Dimensions: 2.8 (W) × 4.7 (H) × 2.8(D)in
Weight: 220g (unit only)

IR-510R
Infrared Wireless Receiver

MAIN FEATURES
CEILING-MOUNT RECEIVER
- Supplied ceiling-mounting brackets
- Equipped with power indicator LED
- Covers a practical radius of approx. 26ft*

*In a space without any obstacles.

Power Source: 24V DC (supplied from the IR-702T)
Current Consumption: Max, 60mA
Infrared Detector
Wavelength: 870nm
Carrier Frequency: Channel A: 3.100MHz/ Channel B: 3.350MHz
Communication Area: Approx. 7m in radius from the point underneath the unit (Ceiling height:2.5 –3.0n in a space without any obstacle

Connection Terminal: 75Ω, BNC jack
Operating Temperature: 32°F to +104°F
Operating Humidity: 30% to 85% RH (no condition)
Finish: Case: Polycarbonate resin, visible light cut filter/Base: ABS resin, black
Dimensions: 4.7 × 2.8 (H)in
Weight: 205g (unit only)
Accessory: Mounting bracket × 1

IR-520R
Infrared Wireless Receiver

MAIN FEATURES
WALL-MOUNT RECEIVER
- Can be mounted on a wall and on a microphone stand. Supplied stand-mounting brackets
- Equipped with power indicator LED
- Reception area is approx. 50ft line of sight*

*In a space without any obstacles.

Power Source: 24V DC (supplied from the IR-702T)
Current Consumption: Max, 30mA
Infrared Detector
Wavelength: 870nm
Carrier Frequency: Channel A: 3.100MHz/ Channel B: 3.350MHz
Communication Area: Approx. 15m in a space without any obstacle

Connection Terminal: 75Ω, BNC jack
Operating Temperature: 32°F to +104°F
Operating Humidity: 30% to 85% RH (no condition)
Finish: Case: Polycarbonate resin, visible light cut filter
Dimensions: 3.3 (W) × 2.5 (H) × 1.3(D)in
Weight: 100g (unit only)
Accessory: Stand mounting bracket × 1, Bracket mounting screw × 2

		IR-500R	IR-510R	IR-520R
Power Source		24 V DC (supplied from the optional IR-702T)		
Current Consumption		Max. 40 mA	Max. 60 mA	Max. 30 mA
Infrared Detector	Wavelength	870 nm		
	Carrier Frequency	Channel A: 3.100 MHz; Channel B: 3.350 MHz		
	Reception Area	Approx. 50ft (15m) (in the space where no obstacles exist)	Practical radius of approx. 26ft (8m) (in the space where no obstacle exist)	Approx. 50ft (15m) (in the space where no obstacle exist)
	Reception Angle	Vertical: 80° (up to 30° movable downward) Horizontal: 80° (up to 30° movable left or right)	--	
Connection Terminal		75 Ω, BNC jack		
Operating Temperature		0°C to +40°C (32°F to 104°F)		
Operating Humidity		30% to 85% RH		
Finish		Filter Section: Polycarbonate, optical cut filter; Base: ABS resin, off-white	Filter Section: Polycarbonate, optical cut filter; Base: ABS resin, black	Filter Section: Polycarbonate, optical cut filter
Dimensions		2.76" (W) × 4.72" (H) × 2.83" (D) 70 (W) × 120 (H) × 72 (D) mm	4.72" × 2.81" (H) 120 × 71.3 (H) mm	3.33" (W) × 2.5" (H) × 1.26" (D) 84.5 (W) × 63.5 (H) × 32 (D) mm
Weight		0.49 lbs (220g) (unit only)	0.45 lbs (205g) (unit only)	0.22 lbs (100g) (unit only)
Accessory		--	Mounting bracket x 1	Stand mounting bracket, Bracket mounting screw

IR Wireless Classroom System

The **IR Classroom System** consists of an IR Integrated Wide-dispersion Ceiling Speaker (IR-820SP) with a built in Infrared Receivers and Amplifier, an IR Wireless Tuner (IR-802T) and hands-free (IR-300M) IR Wireless Microphone, all connected by one CAT-5 cable. This system provides uniform sound throughout the classroom. Cost effective and providing quick installation, this system requires only one wide-dispersion Ceiling Speaker where conventional classroom systems rely on four ceiling speakers. The advantages of using an IR Wireless Classroom system is confidentiality, no longer a need to worry about using up all the available UHF channels, intelligible sound transmission, and the reduction of teacher fatigue during class.

IR-820SP Speaker Amplifier / IR Sensor
IR-802T Mixer/Tuner
MAIN FEATURES
- Complete Package System for Classroom Reinforcement Applications
- Integrated Compact IR Tuner/Mixer & Powered Speaker / IR Sensor connect with a single CAT5 (RJ45) cable for fast, simple installation
- Secure IR transmission is free from eavesdropping and RF interference. No frequency coordination required for adjacent rooms.
- Includes IR-300M Pendent-Style Teacher's Mic and Dual Battery Charger (optional IR-200M Hand-held Student mic is also available)
- Allows use of two IR mics simultaneously (any combination of Teacher / student mics)
- 3 Aux inputs for other audio sources (PC, DVD player, MP3 Player)
- ALD output with level control for connection to Assisted Listen Devices or Remote Classroom feed.
- 20W Class D Amplifier for clean sound with high-efficiency and low temperature operation.
- UL2043-rated amp/speaker allows ceiling plenum installation
- Mute input for priority override of output during paging event.
- 3-band EQ allows for easy tone adjustment
- Optional Rack mount kit (MB-15B-BK), Tile Bridge (HY-TB1) and wall-mount kit (WB-802)

IR-820SP
Infrared Speaker

Power Source: 24V DC (supplied from the IR-802T)
Power Consumption: 4.4W (based on UL standards)
Rated Output: 20W
Frequency Response: 100Hz – 20kHz (-10dB) at installation in 1/2 free sound field (Measured by installing the unit in the center of a ceiling)
Amplification System: Class D
Distortion: 5% or less (rated output)
Speaker Component: 12cm cone-type
Infrared Wireless Receiver
Wavelength: 870nm
Carrier Frequency: Teacher (Channel A): 3,100MHz Student (Channel B): 3,350MHz
Reception Angle: 360° (Horizontal)

Connection Terminal: RJ-45
LED Indicator: Power (green) × 1
UL Code: UL60065, UL2043
Tone Signal: 32.768kHz
Mounting Hole: 300mm
Usable Cable: CAT-5 UTP
Operating Temperature: 32°F to +122°F
Operating Humidity: 90% RH or less (no condensation)
Finish: Enclosure: Steel plate, plating/Baffle: Fire-resistant ABS resin (resin material grade: UL94V-01), white/Punched net: Steel plate, white/ Filter section: Polycarbonate optional cut filter
Dimensions: 12.6 × 8.1in
Weight: 7.5lbs
Accessory: Safety wire × 1, Ceiling reinforcement ring × 1, Trim ring × 1, Paper pattern × 1
Option: Tile bar bridge: HY-TB1

*0dB = 1V

IR-802T
Infrared Wireless Tuner

Power Source: AC mains 50/60Hz (supplied AC adaptor must be used)
Power Consumption: 8W (based on UL standards) Max. 40.8W (rated output at IR-802SP)
Receiving Frequency: Teacher (Channel A): 3,100MHz/Student (Channel B): 3,350MHz
Receiver Sensitivity: 50dB or more, S/N ratio (40dBμV input, 1 kHz modulation, ±4.8 kHz deviation)
S/N Ratio: Tuner: 60dB or more (60dBμV input, 1kHz, ±4.8 kHz deviation, A-weighted, Equalization: Centered)/ AUX: 75dB or more (A-weighted, Equalization: Centered)
Tone Squelch Frequency: 32.768kHz
Input: AUX PC: line, -10dB*, 10kΩ, unbalanced, stereo mini jack (internal mixing)/AUX DVD/TV: line, -10dB*, 10kΩ, unbalanced, 2P RCA jack (internal mixing)/
AUX MP3: line, -10dB+, 10kΩ, unbalanced, stereo mini jack (internal mixing)/Mute: 25V line signals of telephone paging from a school intercom system
Output: ALD (Assistive Listening Device): line, -10dB*, 10kΩ, unbalanced, monaural mini jack/ Speaker: RJ45 (dedicated terminal for IR-802SP connection)
Frequency Response: Tuner: 100Hz – 12kHz, AUX: 100Hz – 20kHz
Equalization: High: ±10dB at 10kHz/ Mid: ±10dB at 1.3kHz/Low: ±10dB at 100Hz
Mute Function: Mute by 25V line signals
LED Indicator: Power (green) × 1, Infrared Reception (yellow) × 2, Mute (red) × 1
Operating Temperature: 14°F to +122°F
Operating Humidity: 90% RH or less (no condition)
Finish: Panel: Aluminum. black/ Case: Steel plate, black
Dimensions: 8.3 (W) × 1.8 (H) × 12.3 (D)in
Weight: 4lbs
Accessory: AC adaptor (DC cord length: 5.9ft) × 1, AC power cord (6.6ft) × 1, Volume control cover × 6, Removable terminal plug (2 pins) × 1
Option: Half width blank panel: MB-15B-BK

*0dB = 1V

Wired Microphone Systems

Desktop Type Microphones

PM-660U
Paging Microphone

MAIN FEATURES
Desktop Paging Microphone
- Cardioid dynamic element
- Elegant, space-saving integral stand design
- Push-to-talk bar with locking lever
- Extra switch contact for mute or relay control
- 5 year warranty

Type: Moving coil microphone
Polar Pattern: Unidirectional
Rated Impedance: 600Ω, balanced
Output Level: -58dB (1kHz, 0dB=1V/pa)
Frequency Range: 100Hz – 10kHz
Output: 5.0, 4-conductor (2-core shielded) cable (8.2ft) without plug
Switch: 1-push-to-talk switch, 1-locking lever, short-off type
Remote Control: 500mA or less at 30V DC
Finish: Microphone head; Zinc plated steel wire, baked paint, gray/Main unit; ABS resin, gray
Dimensions: 3.9 (W) × 8.5 (H) × 5.9 (D) in
Weight: 440g (cord excluded)

* Do not keep the lock lever placed in the locked state (ON position) for a long period of time.
Doing so may cause poor conductivity in the lever switch due to deterioration with age, resulting in unit malfunction.

Handheld Type Microphones

DM-1200
Unidirectional Microphone

(For Speech Use)

MAIN FEATURES
Unidirectional Dynamic Microphone
- XLR-to-1/4" 10m shielded cable
- Universal stand adapter
- Short-off type slide on/off switch
- Diecast zinc body
- 5 year warranty

Type: Moving coil microphone
Directivity: Unidirectional
Rated Impedance: 600Ω, unbalanced
Rated Sensitivity (1kHz 0dB=1V/Pa): -52dB
Frequency Response: 50Hz – 12kHz
Connection Cable: 1-core shielded cable, unbalanced
Cable Length: 32.8ft
Terminal of Cable: Phone plug
Talk Switch: Short-off,slide switch
Finish: Body; Zinc-diecast, Metallic gray/Head; Diecast aluminum, zinc plated steel wire, Metallic gray
Dimensions: 39.5 × 163mm (microphone body)
Weight: 298g (without connection cable)
Accessory: Microphone holder (U5/16, NS5/8, W3/8) × 1

DM-1300
Unidirectional Microphone

(For Speech, Vocal Use)

MAIN FEATURES
Unidirectional Dynamic Microphone
- Cardioid dynamic element
- Diecast zinc body
- On/Off switch
- XLR male connector
- U.S. style stand adapter
- 5 year warranty

Type: Moving coil microphone
Directivity: Unidirectional
Rated Impedance: 600Ω, balanced
Rated Sensitivity (1kHz 0dB=1V/Pa): -54dB
Frequency Response: 70Hz – 15kHz
Connection Cable: 1-core shielded cable, unbalanced
Cable Length: 32.8ft
Terminal of Cable: Phone plug
Talk Switch: Short-off, slide switch
Finish: Body; Die-cast, zinc, metallic gray, paint/ Head; Steel/zinc-plated steel wire, metallic gray, paint
Dimensions: 2 × 6.7in
Weight: 245g (without connection cable)
Accessory: Microphone holder (U5/16) × 1

PM-222U
Unidirectional Paging Microphone

(For Paging Use)

MAIN FEATURES
Noise-Canceling Paging Microphone
- Pig-tail cord with external control contacts and conductors
- Lock-on push-to-talk switch for continuous use
- Mounting sleeve included for wall mount storage
- 5 year warranty

Type: Moving coil microphone
Directivity: Unidirectional
Rated Impedance: 600Ω, unbalanced
Rated Sensitivity: -47dB (1kHz 0dB=1V/Pa)
Frequency Response: 100Hz – 10kHz
Cable: 1-core shielded cable
Cable Length: 6.6ft (when extended)
Terminal: Phone plug
Talk Switch: Short-off type with lock
Finish: ABS resin, Gray
Dimensions: 1.7 (W) × 6.3 (H) × 1.5 (D)in
Weight: 200g
Accessory: Microphone holder × 1, Metal fitting × 1, Tapping screw (4×16) × 2

Other Microphones

EM-600
Flush-Mount Boundary Microphone

MAIN FEATURES
- Electret condenser microphone element with omnidirectional pattern for comprehensive pickup
- Optimized to deliver best performance when used on a desk or attached to a ceiling
- Low-cut filter reduces intrusive noise
- Two rubber isolation rings are provided as an accessory to reduce vibration
- Wide frequency range (30 Hz - 20 kHz) provides well-balanced sound with clarity and a good tonal response
- Phantom power range of 9 to 52 volts enhances operational versatility

Type: Electret condenser
Polar Pattern: Omnidirectional
Rated Impedance: 120Ω, balanced
Rated Sensitivity: -36dB (1kHz 0 dB = 1V/Pa)
Phantom Power: 9 – 52 V DC
Frequency Response: 30Hz – 20kHz
Output Connector: XLR-3-12 equivalent
Operating Temperature: 32°F to +104°F
Finish: Body: Steel, white, semi-gloss, paint/ Head: Zinc-plated steel wire, white, semi-gloss, paint
Dimensions: 1.1 × 2.7in
Weight: 85g
Accessory: Rubber Isolation Ring × 2, M20 Nut × 1

EM-700
Boundary Microphone

MAIN FEATURES
- Ideal for speech and recording applications at meetings, lectures, and religious services
- Electret condenser microphone element with cardioid pattern for focused pickup
- Rejection of undesirable off-axis sound minimized possible feedback
- Low-cut filter switch prevents interference from ambient noise being picked up
- Wide frequency range (30 Hz - 20 kHz) provides well-balanced sound with clarity and a good tonal response
- Phantom power range of 9 to 52 volts enhances operational versatility

Type: Electret condenser
Polar Pattern: Cardioid
Rated Impedance: 120Ω, balanced
Rated Sensitivity: -33dB (1k Hz 0 dB = 1 V/Pa)
Phantom Power: 9 – 52V DC
Frequency Response: 35Hz – 20kHz
Low Cut: 100Hz, -12 dB/oct
Output Connector: XLR-3-12 equivalent
Cable Length: 24.6ft
Operating Temperature: 32°F to +104°F
Finish: Body: Die-cast aluminum, black, mat finish, paint/Punched net: Surface-treated steel plate, black, mat finish, paint
Dimensions: 3.3 (W) × 0.9 (H) × 3.3 (D)in (cord excluded)
Weight: 290g

EM-800
Gooseneck Microphone

(With microphone stand: ST-800)

MAIN FEATURES
- Ideal for speech and recording applications at meetings, lectures, and religious services
- Electret condenser microphone element with cardioid pattern for focused pickup
- Excellent high-frequency response of 60 - 20 kHz delivers clear output even through a PA system
- High sensitivity (-35dB) provides a good tonal response
- Gooseneck with two adjustment points allows more flexible microphone positioning angles
- Rejection of undesirable off-axis sound minimizes possible feedback
- Phantom power range of 9 to 52 volts enhances operational versatility

Type: Electret condenser
Polar Pattern: Cardioid
Rated Impedance: 120Ω, balanced
Rated Sensitivity: -35dB (1kHz 0dB = 1V/Pa)
Phantom Power: 9 – 52V DC
Frequency Response: 60Hz – 20kHz
Output Connector: XLR-3-12 equivalent
Operating Temperature: 32°F to +104°F
Finish: Body, Shaft: Copper alloy, black, semi-gloss, paint
Dimensions: 0.5 × 16.5in
Weight:135g
Accessory: Windscreen × 1
Applicable Stand: Microphone Stand: ST-800 (option)

ST-800
For EM-800
Input Connector: XLR-3-31 equivalent
Output Connector: XLR-3-32 equivalent
Finish: Die-cast zinc, black, mat finish, paint
Dimensions: 4.5 (W) × 1.5 (H) × 5 (D)in
Weight: 1.6lbs

Megaphones

Hand Grip Type Megaphones

Waterproof Hand Grip Type Megaphones

TOA offers an extensive range of **portable powered megaphones** that provide optimal reinforcement for various applications in different environments such as schools, government organization facilities, factories and many others. All models incorporate anti-bacterial treatment to cope with multi-user environments. Featuring compact and stylish designs with powerful outputs, TOA megaphones also offer splash-resistant megaphones as well as high-performance shoulder types that provide a separate auxiliary input and even wireless microphone capability **(ER-2930W)**. Other features such as siren (S) and whistle (W) are available on some models. The wide range of models makes it easier than ever to select a megaphone for any ideal application. Sizes and weights range from powerful shoulder type megaphones with a maximum 45W output to light, compact models. The speaker features rugged polyimide (PI) materials for the diaphragms and neodymium magnets to achieve exceptional acoustic performance. Excellent battery life from AA, C or D batteries (depending on megaphone model) provides significantly longer performance. Fixed stand options are also available. TOA's megaphones are backed by a five year warranty.

ER-1203 (4W max.)
Hand Grip Type Megaphones

MAIN FEATURES
SPLASH-PROOF HANDHELD MEGAPHONE
- IP-X5 Rated - protected against low pressure jets of water from all directions
- 4 Watt Maximum Output
- 4 AA Batteries (8 hrs)
- Range: 125m
- Anti-bacterial treatment for all models (mouthpiece/microphone and handle)
- High durability ASA resin construction
- Compact and lightweight
- Wide frequency range for enhanced audio quality
- Neodymium magnets and Polyimide speaker diaphragms
- Optional wall-mount bracket, model SP-1100

Power Source: R6P (AA) × 4 (6V DC)
Output Power: Rated 3W, max. 4W
Battery Life: Approx. 8hrs. (JEITA)*
Audible Range: Approx. 125m (JEITA)*
Frequency Response: 500Hz – 6kHz (SPL -20dB)
Magnetic Circuit: Neodymium Magnet, inner magnet type
Diaphragm: Polyimide film (voice coil, bobbin)
Anti-bacterial Treatment: Mouth and handle
Water Protection: IPX5
Operating Temperature: -32°F to +104°F
Finish: Horn; ASA resin, clear dark gray/Other; ASA resin, dark gray/Strap; Nylon, black
Dimensions: 5.4 (W) × 10.1 (H) × 8.3 (D)in
Weight: 1.3lbs (without batteries)
Option: Wall mounting bracket for megaphone: SP-1100

ER-1206 (10W max.)
Hand Grip Type Megaphone

MAIN FEATURES
SPLASH-PROOF HANDHELD MEGAPHONE
- IP-X5 Rated - protected against low pressure jets of water from all directions
- 10 Watt Maximum Output
- 6 AA Batteries (8 hrs) or 4 AA batteries (5 hrs)
- Range: 250m (speech)
- Anti-bacterial treatment for all models (mouthpiece/microphone and handle)
- High durability ASA resin construction
- Compact and lightweight
- Wide frequency range for enhanced audio quality
- Neodymium magnets and Polyimide speaker diaphragms
- Optional wall-mount bracket, model SP-1100

Power Source: R6P (AA) × 6 (9V DC) or R6P (AA) × 4 (6V DC)
Output Power: Rated 6W, max. 10W

Battery Life: When using six R6P batteries: Approx. 8hrs. (JEITA)*/When using four R6P batteries: Approx. 5hrs. (JEITA)*
Audible Range: Approx. 250m (JEITA)*
Frequency Response: 450Hz – 6kHz (SPL -20dB)
Magnetic Circuit: Neodymium Magnet, inner magnet type
Diaphragm: Polyimide film (voice coil, bobbin)
Anti-bacterial Treatment: Mouth and handle
Water Protection: IPX5
Operating Temperature: -32°F to +104°F
Finish: Horn; ASA resin, clear dark gray/Other; ASA resin, dark gray/Strap; Nylon, black
Dimensions: 6 (W) × 10.5 (H) × 9.8 (D)in
Weight: 1.5lbs (without batteries)
Accessory: Battery spacer × 1
Option: Wall mounting bracket for megaphone: SP-1100

ER-1206W (10W max.)
Hand Grip Type Megaphone with Whistle

MAIN FEATURES
SPLASH-PROOF HANDHELD MEGAPHONE
- IP-X5 Rated - protected against low pressure jets of water from all directions
- Whistle Function
- 10 Watt Maximum Output
- 6 AA Batteries (8 hrs) or 4 AA batteries (5 hrs)
- Range: 250m (speech) / 315m (siren)
- Anti-bacterial treatment for all models (mouthpiece/microphone and handle)
- High durability ASA resin construction
- Compact and lightweight
- Wide frequency range for enhanced audio quality
- Neodymium magnets and Polyimide speaker diaphragms
- Optional wall-mount bracket, model SP-1100

Power Source: R6P (AA) × 6 (9V DC) or R6P (AA) × 4 with battery spacer (6V DC)
Output Power: Rated 6W, max. 10W
Battery Life: When using six R6P batteries (JEITA)*: Voice: Approx. 8hrs., Whistle; Approx. 20 minutes/When using four R6P batteries (JEITA)*: Voice: Approx. 5hrs., Whistle; Approx. 10 minutes

Audible Range: Voice: Approx. 250m (JEITA)*, Whistle: Approx. 315m (JEITA)*
Signal Sound: Whistle
Frequency Response: 450Hz – 6kHz (SPL -20dB)
Magnetic Circuit: Neodymium Magnet, inner magnet type
Diaphragm: Polyimide film (voice coil, bobbin)
Anti-bacterial Treatment: Mouth and handle
Water Protection: IPX5
Operating Temperature: -32°F to +104°F
Finish: Horn; ASA resin, clear dark gray/Other; ASA resin, yellow/Strap; Nylon, black
Dimensions: 6 (W) × 10.5 (H) × 9.8 (D)in
Weight: 1.5lbs (without batteries)
Accessory: Battery spacer × 1
Option: Wall mounting bracket for megaphone: SP-1100

ER-1206S (10W max.)
Hand Grip Type Megaphone with Siren

MAIN FEATURES
SPLASH-PROOF HANDHELD MEGAPHONE
- IP-X5 Rated - protected against low pressure jets of water from all directions
- Siren Function
- 10 Watt Maximum Output
- 6 AA Batteries (8 hrs) or 4 AA batteries (5 hrs)
- Range: 250m (speech) / 315m (siren)
- Anti-bacterial treatment for all models (mouthpiece/microphone and handle)
- High durability ASA resin construction
- Compact and lightweight
- Wide frequency range for enhanced audio quality
- Neodymium magnets and Polyimide speaker diaphragms
- Optional wall-mount bracket, model SP-1100

Power Source: R6P (AA) × 6 (9V DC) or R6P (AA) × 4 with battery spacer (6V DC)
Output Power: Rated 6W, max. 10W
Battery Life: When using six R6P batteries (JEITA)*: Voice; Approx. 8hrs., Siren; Approx. 20 minutes/When using four R6P batteries (JEITA)*: Voice; Approx. 5hrs., Siren; Approx. 10 minutes

Audible Range: Voice: Approx. 250m (JEITA)*, Siren: Approx. 315m (JEITA)*
Signal Sound: Siren (sounds of 5 seconds intervals)
Frequency Response: 450Hz – 6kHz (SPL -20dB)
Magnetic Circuit: Neodymium Magnet, inner magnet type
Diaphragm: Polyimide film (voice coil, bobbin)
Anti-bacterial Treatment: Mouth and handle
Water Protection: IPX5
Operating Temperature: -32°F to +104°F
Finish: Horn; ASA resin, clear red/Other; ASA resin, red/Strap; Nylon, black
Dimensions: 6 (W) × 10.5 (H) × 9.8 (D)in
Weight: 1.5lbs (without batteries)
Accessory: Battery spacer × 1
Option: Wall mounting bracket for megaphone: SP-1100

*JEITA: Japan Electronics and Information Technology Industries Association. (EIAJ TT-4501A)

Hand Grip Type Megaphones

ER-520 (10W max.)
Hand Grip Type Megaphone

MAIN FEATURES
COMPACT HANDHELD MEGAPHONE
- 10 Watt Maximum Output
- 8 AA Batteries (8 hrs)
- Range: 250m (speech)
- Anti-bacterial treatment for all models (mouthpiece/microphone and handle)
- High durability ABS resin construction
- Compact and lightweight
- Wide frequency range for enhanced audio quality
- Neodymium magnets and Polyimide speaker diaphragms

Power Source: R6P (AA) × 8 (12V DC)
Output Power: Rated 6W, max. 10W
Battery Life: Approx. 10hrs. (JEITA)*
Audible Range: Approx. 250m (JEITA)*
Diaphragm: Polyimide film
Anti-bacterial Treatment: Mouth and handle
Operating Temperature: -32°F to +104°F
Finish: Horn; ABS resin, light gray/Handle, mouth and others; ABS resin, gray/Strap; Tetoron, black
Dimensions: 6.3 (W) × 10 (H) × 10.2 (D)in
Weight: 1.4lbs (without batteries)

ER-520W (10W max.)
Hand Grip Type Megaphone with Whistle

MAIN FEATURES
COMPACT HANDHELD MEGAPHONE
- 10 Watt Maximum Output
- 8 AA Batteries (8 hrs)
- Range: 250m (speech) / 315m (Whistle)
- Anti-bacterial treatment for all models (mouthpiece/microphone and handle)
- High durability ABS resin construction
- Compact and lightweight
- Wide frequency range for enhanced audio quality
- Neodymium magnets and Polyimide speaker diaphragms

Power Source: R6P (AA) × 8 (12V DC)
Output Power: Rated 6W, max. 10W
Battery Life: Voice: Approx. 10hrs. (JEITA)*, Whistle; Approx. 30 minutes (JEITA)*
Audible Range: Voice: Approx. 250m (JEITA)*, Whistle: Approx. 315m (JEITA)*
Signal Sound: Whistle
Diaphragm: Polyimide film
Anti-bacterial Treatment: Mouth and handle
Operating Temperature: -32°F to +104°F
Finish: Horn; ABS resin, light gray/Handle, mouth and others; ABS resin, gray/Strap; Tetoron, black
Dimensions: 6.3 (W) × 10 (H) × 10.2 (D)in
Weight: 1.4lbs (without batteries)

ER-520S (10W max.)
Hand Grip Type Megaphone with Siren

MAIN FEATURES
COMPACT HANDHELD MEGAPHONE
- 10 Watt Maximum Output
- 8 AA Batteries (8 hrs)
- Range: 250m (speech) / 315m (siren)
- Anti-bacterial treatment for all models (mouthpiece/microphone and handle)
- High durability ABS resin construction
- Compact and lightweight
- Wide frequency range for enhanced audio quality
- Neodymium magnets and Polyimide speaker diaphragms

Power Source: R6P (AA) × 8 (12V DC)
Output Power: Rated 6W, max. 10W
Battery Life: Voice: Approx. 10hrs. (JEITA)*, Siren; Approx. 40 minutes (JEITA)*
Audible Range: Voice: Approx. 250m (JEITA)*, Siren: Approx. 315m (JEITA)*
Signal Sound: Siren
Diaphragm: Polyimide film
Anti-bacterial Treatment: Mouth and handle
Operating Temperature: -32°F to +104°F
Finish: Horn, mouth and handle; ABS resin, red/Handle, mouth and others; ABS resin, gray/Strap; Tetoron, black
Dimensions: 6.3 (W) × 10 (H) × 10.2 (D)in
Weight: 1.4lbs(without batteries)

ER-1215 (23W max.)
Hand Grip Type Megaphone

MAIN FEATURES
HANDHELD MEGAPHONE
- 23 Watt Maximum Output
- 6 C Batteries (14 hrs)
- Range: 315m (speech)
- Anti-bacterial treatment for all models (mouthpiece/microphone and handle)
- High durability ABS resin construction
- Compact and lightweight
- Wide frequency range for enhanced audio quality
- Neodymium magnets and Polyimide speaker diaphragms

Power Source: R14P (C) × 6 (9V DC)
Output Power: Rated 15W, max. 23W
Battery Life: Approx. 14hrs. (JEITA)*
Audible Range: Approx. 315m (JEITA)*
Diaphragm: Polyimid film (voice coil, bobbin)
Anti-bacterial Treatment: Mouth and handle
Operating Temperature: -32°F to +104°F
Finish: Horn; ABS rein, light gray/Other; ABS rein, gray/Strap; Nylon, black
Dimensions: 8.3 (W) × 11.5 (H) × 13.6 (D)in
Weight: 2.4lbs (without batteries)

*JEITA: Japan Electronics and Information Technology Industries Association. (EIAJ TT-4501A)

ER-1215S (23W max.)
Hand Grip Type Megaphone with Siren

MAIN FEATURES
HANDHELD MEGAPHONE
- 23 Watt Maximum Output
- 6 C Batteries (14 hrs)
- Range: 315m (speech) / 500m (siren)
- Anti-bacterial treatment for all models (mouthpiece/microphone and handle)
- High durability ABS resin construction
- Compact and lightweight
- Wide frequency range for enhanced audio quality
- Neodymium magnets and Polyimide speaker diaphragms

Power Source: R14P (C) × 6 (9V DC)
Output Power: Rated 15W, max. 23W
Battery Life: Voice: Approx. 14hrs. (JEITA)*, Siren; Approx. 20 minutes (JEITA)*
Audible Range: Voice: Approx. 315m (JEITA)*, Siren: Approx. 500m (JEITA)*
Signal Sound: Siren (sound at 5 seconds intervals)
Diaphragm: Polyimide film (voice coil, bobbin)
Anti-bacterial Treatment: Mouth and handle
Operating Temperature: -32°F to +104°F
Finish: Horn, mouth, battery case and handle; ABS resin, red//Strap; Nylon, black
Dimensions: 8.3 (W) × 11.5 (H) × 13.6 (D)in
Weight: 2.6lbs (without batteries)

ER-3215 (23W max.)
Hand Grip Type Megaphone

MAIN FEATURES
SHOULDER MEGAPHONE
- Detachable Hand-held Microphone with volume control and On/Off switch
- 23 Watt Maximum Output
- 6 C Batteries (9 hrs)
- Range: 400m
- Anti-bacterial treatment for all models (mouthpiece/microphone and handle)
- High durability ABS resin construction
- Compact and lightweight
- Wide frequency range for enhanced audio quality
- Neodymium magnets and Polyimide speaker diaphragms

Power Source: R14P (C) × 6 (9V DC)
Output Power: Rated 15W, max. 23W
Battery Life: Approx. 9hrs. (JEITA)*
Audible Range: Approx. 400m (JEITA)*
Diaphragm: Polyimide film (voice coil, bobbin)
Anti-bacterial Treatment: Mouth and handle
Operating Temperature: -32°F to +104°F
Finish: Horn; ABS resin, light gray/Microphone and other; ABS resin, gray/Strap; Nylon, black
Dimensions: 8.3 (W) × 11.5 (H) × 15 (D)in (when attaching the microphone)
Weight: Body: 2.5lbs (without microphone and batteries)/Microphone: 150g

SP-1100
Wall Hanging Bracket

for ER-1203, ER-1206, ER-1206S and ER-1206W.

Finish: Stay: Stainless steel
Holder and Dustproof cover: ABS resin, clear dark
Weight: 410g
Accessory: Wall mounting screw × 2

Shoulder Type Megaphones and Accessories

ER-2215 (23W max.)
Shoulder Type Megaphone

MAIN FEATURES
- Detachable Hand-held Microphone with volume control and On/Off switch
- 23 Watt Maximum Output
- 6 C Batteries (9 hrs)
- Range: 400m
- Anti-bacterial treatment for all models (mouthpiece/microphone and handle)
- High durability ABS resin construction
- Compact and lightweight
- Wide frequency range for enhanced audio quality
- Neodymium magnets and Polyimide speaker diaphragms

Power Source: R14P (C) × 6 (9V DC)
Output Power: Rated 15W, max. 23W
Battery Life: Approx. 9hrs. (JEITA)*
Audible Range: Approx. 400m (JEITA)*
Diaphragm: Polyimide film (voice coil, bobbin)
Anti-bacterial Treatment: Microphone
Operating Temperature: -32°F to +104°F
Finish: Horn; ABS resin, light gray/Microphone and other; ABS resin, gray/Strap; Nylon, black
Dimensions: 8.3 × 13.2in
Weight: Body: 2.5lbs (without microphone and batteries)/Microphone: 150g

ER-2215W (23W max.)
Shoulder Type Megaphone with Whistle

MAIN FEATURES
- Detachable Hand-held Microphone with volume control and On/Off switch
- 23 Watt Maximum Output
- 6 C Batteries (9 hrs)
- Range: 400m (speech) / 500m (whistle)
- Anti-bacterial treatment for all models (mouthpiece/microphone and handle)
- High durability ABS resin construction
- Compact and lightweight
- Wide frequency range for enhanced audio quality
- Neodymium magnets and Polyimide speaker diaphragms

Power Req.: R14P (C) × 6 (9V DC)
Output Power: Rated 15W, max. 23W
Battery Life: Voice: Approx. 9hrs. (JEITA)*, Whistle; Approx. 20 minutes (JEITA)*
Audible Range: Voice: Approx. 400m (JEITA)*, Whistle: Approx. 500m (JEITA)*
Signal Sound: Whistle (1.6 to 2.4kHz)
Diaphragm: Polyimide film (voice coil, bobbin)
Anti-bacterial Treatment: Microphone
Operating Temperature: -32°F to +104°F
Finish: Horn; ABS resin, light gray/Microphone and other; ABS resin, gray/Strap; Nylon, black
Dimensions: 8.3 × 13.2in
Weight: Body: 2.6lbs (without microphone and batteries)/Microphone: 150g

ER-2230W (45W max.)
Shoulder Type Megaphone with Whistle

MAIN FEATURES
- Detachable Hand-held Microphone with volume control and On/Off switch
- Whistle function
- 45 Watt Maximum Output
- 10 D batteries (17 hrs)
- Battery Life Indicator
- Range: 800m (voice) / 1000m (whistle)
- Auxiliary Line Input
- External Microphone Input
- Anti-bacterial treatment for all models (mouthpiece/microphone and handle)
- High durability ABS resin construction
- Compact and lightweight
- Wide frequency range for enhanced audio quality
- Neodymium magnets and Polyimide speaker diaphragms

Power Source: Battery: R20P (D) × 10 (15V DC)/ External Power: 12V DC Battery
Output Power: Rated 30W, max. 45W
Signal Sound: Whistle (1.6 to 2.4kHz)
Battery Life: Voice: Approx. 17hrs. (JEITA)*, Whistle; Approx. 90 minutes (JEITA)*
Audible Range: Voice: Approx. 800m (JEITA)*, Whistle: Approx. 1000m (JEITA)*
AUX Input Sensitivity: -10dB*[1] (300mV), 10kΩ (3.5 mini jack, stereo plug acceptable), volume control
EXT Mic Input: 600Ω, unbalanced, 6.3 volume control
Diaphragm: Polyimide film (voice coil, bobbin)
Anti-bacterial Treatment: Microphone
Remaining Battery Indication: LED (also serves as power indicator)/Steady ON: Normal use, Flashing: Batteries need replacement
Operating Temperature: -32°F to +104°F
Finish: Horn ring; Vinyl chloride, gray/Horn; Aluminum, light gray, paint/Case top; Die-cast aluminum, gray, paint/Strap; Nylon, black/Others; ABS resin, gray
Dimensions: 13.8 × 20.2in
Weight: Body: 7.9lbs (without microphone and batteries)/Microphone: 150g
Accessory: 3.5 mini plug (AUX input) × 1/ External power supply cord (3.3ft) × 1/ Splash-proof cover ×1*[2]
Option: Microphone: DM series

ER-2930W (45W max.)
Shoulder Type Megaphone with Whistle

MAIN FEATURES
- Detachable Hand-held Microphone with volume control and On/Off switch
- Wireless Mic Option
- WTU-4800 UHF Tuner Module
- Handheld, Lapel or headset Mic Options
- Whistle function
- 45 Watt Maximum Output
- 10 D batteries (17 hrs)
- Battery Life Indicator
- Range: 800m (voice) / 1000m (whistle)
- Auxiliary Line Input
- External Microphone Input
- Anti-bacterial treatment for all models (mouthpiece/microphone and handle)
- High durability ABS resin construction
- Compact and lightweight
- Wide frequency range for enhanced audio quality
- Neodymium magnets and Polyimide speaker diaphragms

Power Source: Battery: R20P (D) × 10 (15V DC)/ External Power: 12V DC Battery
Output Power: Rated 30W, max. 45W
Signal Sound: Whistle (1.6 to 2.4kHz)
Battery Life: Voice: Approx. 17hrs. (JEITA)*, Whistle; Approx. 90 minutes (JEITA)*
Audible Range: Voice: Approx. 800m (JEITA)*, Whistle: Approx. 1000m (JEITA)*
AUX Input Sensitivity: -10dB*[1] (300mV), 10kΩ (3.5 mini jack, stereo plug acceptable), volume control
EXT Mic Input: 600Ω, unbalanced, ø6.3 phone jack, volume control
Receiving Frequency: UHF (800MHz Band)/ VHF (200MHz Band)
Antenna: Fold-down flexible antenna
Diaphragm: Polyimid film (voice coil, bobbin)
Anti-bacterial Treatment: Microphone
Remaining Battery Indication: LED (also serves as power indicator)/Steady ON: Normal use, Flashing: Batteries need replacement
Operating Temperature: -32°F to +104°F
Finish: Horn ring; Vinyl chloride, gray/ Horn; Aluminum, light gray, paint/ Case top; Die-cast aluminum, gray, paint/ Strap; Nylon, black/Others; ABS resin, gray
Dimensions: 13.8 × 20.2in
Weight: Body: 8.4lbs (without microphone and batteries)/Microphone: 150g
Accessory: 3.5 mini plug (AUX input) × 1/ External power supply cord (3.3ft) × 1/Splash-proof cover ×1*[2]
Option: Microphone: DM series/Wireless Microphone: WM-3220 series, WM-3310 series, WM-4200 series, WM-4300 series/Wireless tuner: WTU-3800 series, WTU-4800 series

Note: Batteries are optional.

* JEITA: Japan electronics and information technology industries association (EIAJ TT-4501A)

*[1] 0dB = 1V

*[2] Do not the unit in heavy rains or strong winds, or in locations where the unit is directly exposed to water even using with the supplied splash-proof cover.

Optional Wireless Tuner Unit
for ER-2930W.

WTU-4800: UHF

Hands-Free Type Megaphones

ER-604W (10W max.)
Compact Power Megaphone

MAIN FEATURES
SHOULDER MEGAPHONE
- Shoulder megaphone with external handheld microphone, volume control and On/Off switch
- Push button-activated whistle tone
- External Microphone and Auxiliary inputs
- Batteries: eight “AA” or external 12 VDC
- Battery test indicator
- Output Power: 10 W
- Optional Headset Microphone: WH-4000H

Power Source: R6P battery x 8 (12 V DC)
12V DC / 0.8A or more (AC adapter or DC power supply unit usable.)
Output Power : Rated 6W, max. 10W
Battery Life : Voice: Approx. 10 hrs/ (R6P manganese dioxide battery use)
Whistle: Approx. 30 minutes (continuous use)
Audible Range: Voice: 160m (under noise level of 55dB)
Whistle: 160m (under noise level of 55dB)
Microphone: Close-talking type/press-to-talk switch, volume control/
Fixed to the microphone hanger on the unit's top panel
Signal: Whistle, push switch activation
Input: MIC 1: -40dB, 1.5kΩ, 6.3 mm (1/4") phone jack/
MIC 2: -18dB, 3kΩ, 3.5 mm mini jack, phantom powering/
AUX (auxiliary): -12dB, 18kΩ, 3.5 mm mini jack/
External power supply: 12V DC

Note: MIC 1, 2, and AUX inputs can be used at the same time. However, their individual volume cannot be adjusted as the unit's volume control is common to those inputs.

Other Functions: Voice switch (functions to activate the unit with external input signals, and to make the unit in stand-by status with no external signal.)
Battery check
Finish : Body, microphone: ABS resin, off-white Shoulder pad, belt: Black
Weight: 3.5lbs (without batteries)
Dimensions: 4 (W) × 10.2 (H) × 8.5 (D) in (excluding shoulder belt)
Accessory : 3.5 mini plug × 1, External power supply cord (3.3ft) × 1
Option: Headset microphone: WH-4000A, WH-4000H
Dynamic microphone: DM series

ER-1000 (10W max.)
Personal PA System

TOA’s **ER-1000** is a portable, easy-to-operate personal PA system that delivers high-quality adjustable-volume sound. The lightweight main unit incorporates an adjustable waistband that is worn around the user’s waist. The microphone comes with a headset, keeping both hands free while making announcements. The main unit has a slightly curved design to fit snugly against the user’s body. The **ER-1000** is suited to applications, including, guided tours, sports, directing traffic and other security-and-safety-related applications, and attracting people to events or storefronts.

MAIN FEATURES
- Clear and reliable 4” (10cm) Neodymium driver
- Ultra-light body 1.06lbs (480g)
- Maximum output 10W
- Maximum audible range of 262 ft (80m)
- 31.5” (80cm) long elastic waist belt extendable up to 47.24” (120cm). A 11.81” (30cm) extension belt is included
- Headset-type lightweight and comfortable-to-wear microphone unit
- Large rotating volume control and independent power on/off switch
- AUX input terminal allows BGM to be connected while public address announcements are being made
- Pouch included on waist belt to hold audio player and extra batteries
- Six AA batteries provide up to 8 hours of use (Supplied battery spacers for operation with four AA batteries to save battery power.)
- 5 year warranty

Power Source: Alkaline battery (R6P); x 6 (9V DC) or x 4 (6V DC)
Rechargeable nickel metal hydride (NiMH) battery (HR15/51); x 6 (7.2V DC) or x 4 (4.8V DC)
Black manganese battery (R6PU); x 6 (9V DC) or x 4 (6V DC)
Output: Rated 6W, max. 10W when 6 AA batteries (9V DC) are used
Rated 3W, max. 4W when 4 AA batteries (6V DC) are used
Battery Life : Voice operation: Approx. 8 hrs (when alkaline batteries are used)
AUX stereo input operation: Approx. 4.5 hrs (when alkaline batteries are used)
Audible Range: Voice operation: Approx. 80m (when 6 alkaline batteries or NiMH batteries are used)
Frequency Range: 300Hz – 13kHz (deviation+ -26dB)
Headphone Microphone: Ear-on type, electret condenser microphone sensitivity: -47dB (0dB = 1V/1pa. 2kHz)
Input: MIC: -30dB*, 3kΩ, 3.5mm stereo mini-jack (supporting monaural applications)
AUX: -10dB, 2kΩ, 3.5mm stereo mini-jack (supporting monaural applications)
Maximum Belt Length: 55 – 120cm , 90 – 160cm (when wearing an accessory extension belt)
Finish: Front: ABS resin, light grayish purple
Rear case: ABS resin, dark grayish purple
Grille: Surface-treated steel plate dark grayrish purple, paint
Waist belt: Elastic rubber, black
Dimensions: 5.2 (W) × 3.8 (H) × 8.7 (D) in (belt excluded)
Weight:
Main PA unit (belt included, batteries excluded): 480g
Headset microphone: 50g
Extension belt: 40g
Accessories: Headset microphone (with head band and wind screen) x 1, Belt (attached to the main PA unit) x 1, Extension belt x 1, Battery spacer x 2

* 0dB = 1V

IP Network Intercom Systems

N-8000 Series IP Network Intercom System

The newly expanded **N-8000 Series IP Network Intercom System** offers flexible communications for up to 3,072 stations on existing corporate local and wide area data networks. It is a network-compatible intercom system using packet audio technology. Built on TOA's proven NX-100 network audio technology, the new IP Intercom products occupy minimal network bandwidth (130 kbps maximum) for station-to-station calls and can be controlled and monitored through software or web browser. Programmable system functions include 192 paging zones, time-based call forwarding and scan monitoring. Monitoring can be real-time over the internet as the system is not server based. System frequency response extends to 7 kHz, allowing even PA-delivered announcements to be extremely clear and easily intelligible. Communications can be selected by the user as needed -- the "Master-to-Master" system optimized for full duplex conversation at such venues as factories and hospitals, or the "Master-to-Sub" (half duplex) system which is particularily suited for schools, prisons, and similar locations.

MAIN FEATURES

N-8000 SERIES

IP NETWORK INTERCOM

- System configuration by intuitive software through LAN
- "Master-to-Master" (full duplex) or "Master-to-Sub" (half duplex) station communication
- Multiple wiring types can be used including 2 core shielded type, twisted pair, 4-wire, and Cat5
- Integration with such other systems as access control, voice alarm system, CCTV system
- Ambient noise control
- Time correction function
- Operation stream logs
- System diagnosis
- Expandable System: Up to 192 exchanges, IP stations and assorted interfaces can be connected for a maximum of 3,072 stations
- Occupies minimal network bandwidth — 130 kbps max. (station to station call)
- Hands-free full-duplex conversation (Not including Q-N8540WP which offer Half-Duplex conversation)
- No boundary limits: IP compatible system allows local areas to be linked to cities in other countries
- Control and monitor through software and web browser
- Under centralized PC control using TOA software, all exchanges, IP stations and interface units can be connected to LANs, WANs and fiber optic networks
- Integrating communications and safety: from duplex conversations between stations, paging broadcasts, scheduled broadcasts, to BGM broadcasts and similar functions
- Provides master control, connecting to pre-existing intercom, alarm surveillance, door entry/departure authorization, etc.
- Easy installation and maintenance

Exchanges

N-8000EX
(Internal: 4 links/External: 8 links)

Network Intercom Exchange

MAIN FEATURES
- 10/100BaseTX Ethernet network connection
- Occupies one network node (192 max.)
- Sixteen (16) station capacity
- Stations connect to exchange via two-wire twisted pair
- Provides 48 VDC to each station
- Speech links: 4 internal / 8 external
- Two (2) audio paging outputs (0 dBV)
- Two (2) relay outputs
- Includes rack-mount and wall-mount brackets

Power Source: 120V AC, 50/60Hz
Power Consumption: 50W (at rated), 75W (max.)
Interface Section for station
Number of lines: 16 lines
Number of speech link: Internal: 4/External: 8
Type of Speech Path: Space sharing/Time Space sharing
Transmission System: 2 wire 160kbps echo canceller transmission system
Signal Level: 0dB* or less
Transmission Range: Max. 1500m (0.65mm. Loop resistance 170Ω)
Speech Method: Simultaneous conversation by way of echo canceller (Hand-free), Simultaneous conversation by way of echo canceller or Half-duplex conversation by way of voice switch (Handset), PTT conversation
Connecter: Dedicated connector
Wiring method: 1 set of twisted pair cable
Feeding voltage/current: 48V DC, Max. 70mA
Paging Output: Audio: 2 channels Max. 0dB*, 600Ω, balanced/ Control: 2 channels, relay contact output, contact capacity: 24V DC/0.5A/
Connector: Removable terminal block
Network Section
Network I/F: 10BASE-T/100BASE-TX (Automatic-Negotiation)
Network Protocol: TCP/IP, UDP, ARP, ICMP, HTTP, RTP, IGMP
Audio Packet Transmission System: Unicast/Multicast
Number of paging destinations: Unicast (max. 16), Multicast (max.191)
Connector: RJ45 connector
Voice Sampling Frequency: 16kHz, 8kHz (Controllable on the software)
Quantifying Bit Number: 16-bit
Voice Encoding Method: Sub-band ADPCM, Cryptosystem
Voice Packet Loss Recovery: Silence insertion
Audio Delay Time: 80ms, 320ms (Controllable on the software)
Indication: Network LNK/ACT indication, Status Lamp, Power-on indication lamp
Others: Firmware update function, System data hold function, Reset switch (front panel)
Forced air cooling, Time of day hold facility
Installation Method: Rack, Desk, Surface mount
Operating Temperature: 32°F to +104°F
Operating Humidity: 90% or less RH (no condensation)
Finish: Pre-coated steel plate, black, 30% gloss
Dimensions: 16.5 (W) × 1.7 (H) × 14 (D)in
Weight: 9lbs
Accessory: AC power cord (6.6ft) × 1, CD (for PC setting, maintenance use) × 1, Detachable terminal plug (4P) × 2, Detachable terminal plug (2P) x 20, Plastic foot × 4, Screw for fitting plastic foot x 4, Rack mounting bracket × 2, Screw for rack mounting × 4, Wall mounting bracket × 2, Screw for mounting bracket × 8, Screw for wall mounting × 4

*0dB = 1V

N-8010EX
(Internal: 1 link/External: 2 links)

Network Intercom Exchange

MAIN FEATURES
(ECONOMY)
- 10/100BaseTX Ethernet network connection
- Occupies one network node (192 max.)
- Sixteen (16) station capacity
- Stations connect to exchange via two-wire twisted pair
- Provides 48 VDC to each station
- Speech links: 1 internal / 2 external
- Includes rack-mount and wall-mount brackets

Power Source: 120V AC, 50/60Hz
Power Consumption: 50W (at rated), 75W (max.)
Interface Section for station
Number of lines: 16 lines
Number of speech link: Internal: 1/External: 2
Type of Speech Path: Space sharing/Time Space sharing
Transmission System: 2 wire 160kbps echo canceller transmission system
Signal Level: 0dB* or less
Transmission Range: Max. 1500m (0.65mm. Loop resistance 170Ω)
Speech Method: Simultaneous conversation by way of echo canceller (Hand-free), Simultaneous conversation by way of echo canceller or Half-duplex conversation by way of voice switch (Handset), PTT conversation
Connecter: Dedicated connector
Wiring method: 1 set of twisted pair cable
Feeding voltage/current: 48V DC, Max. 70mA
Paging Output: Station paging only
Network Section
Network I/F: 10BASE-T/100BASE-TX (Automatic-Negotiation)
Network Protocol: TCP/IP, UDP, ARP, ICMP, HTTP, RTP, IGMP
Audio Packet Transmission System: Unicast/Multicast
Number of paging destinations: Unicast (max. 16), Multicast (max.191)
Connector: RJ45 connector
Voice Sampling Frequency: 16kHz, 8kHz (Controllable on the software)
Quantifying Bit Number: 16-bit
Voice Encoding Method: Sub-band ADPCM, Cryptosystem
Voice Packet Loss Recovery: Silence insertion
Audio Delay Time: 80ms, 320ms (Controllable on the software)
Indication: Network LNK/ACT indication, Status Lamp, Power-on indication lamp
Others: Firmware update function, System registration data hold facility, Time of day hold facility, Forced air cooling, Reset switch (front panel)
Setting Method: Rack, Desk, Surface mount
Operating Temperature: 32°F to +104°F
Operating Humidity: Under 90% RH (no condensation)
Finish: Pre-coated steel plate, black, 30% gloss
Dimensions: 16.5 (W) × 1.7 (H) × 13.7 (D)in
Weight: 9.3lbs
Accessory: AC power cord (6.6ft) × 1, CD (for PC setting, maintenance use) × 1, Detachable terminal plug (2P) x 20, Plastic foot × 4, Screw for fitting plastic foot x 4, Rack mounting bracket × 2, Screw for rack mounting × 4, Wall mounting bracket × 2, Screw for mounting bracket × 8, Screw for wall mounting × 4

*0dB = 1V

Interface Units

N-8000MI
Multi Interface Unit

MAIN FEATURES
(BGM, TEL, EXES, CONTROL I/O)
- 10/100BaseTX Ethernet network connection
- Occupies one network node (192 max.)
- Audio Inputs for BGM, External Tone or Paging
  - Two audio line inputs (0 dBV) with two trigger inputs
  - Two audio line outputs (0 dBV) with two relay outputs
- Contact Bridge
- Sixteen contact inputs
- Sixteen relay outputs
- Telephone Interface (E&M type), two channels
- Interface for connecting to legacy EXES-6000 systems (Q-TI-600 also required)
- Includes rack-mount and wall-mount brackets

Power Source: 120V AC, 50/60Hz
Power Consumption: 16W (250mA) (at rated), 21W (330mA) (max.)
Audio Input*3: Input: 2 inputs (2P/input), Max. 0dB*1, 600Ω or less, balanced, with a semi-fixed volume for adjustment (0 to -25dB)/Control: 2 inputs (2P/input), no-voltage make contact input, open voltage: 12V DC, short-circuit current: 10mA/ Removable terminal block (8 pins)
Audio Output*3: Output: 2 outputs (2P/output), Max. 0db*1, 600Ω or less, balanced/Control: 2 outputs (2P/output), relay contact output, contact capacity: 24V DC/0.5A/Removable terminal block (8 pins)
Control Input*3: 16 inputs, no-voltage make contact input, open voltage; 12V DC, short-circuit current: 10mA, removable terminal block (18 pins)
Control Output*3: 16 outputs, relay contact output, contact capacity: 24V DC/0.5A, removable terminal block (18 pins)
PBX I/F*3: PBX input and output: 2 channels, Max.: 0dB*2 or less, Average: -15dB*2 or less, 600Ω, balanced, mini-clamp connector (2 pins), with adjustment functions for both input and output (Input: 0 to +15dB, Output: -15 to 0dB), Analog E & M interface
Tie-line I/F*3: Tie-line input and output: 2 channels, Max.: 0dB*2 or less, Average: -15dB*2 or less, 600Ω, balanced, mini-clamp connector (2 pins)/Signal method: EXES-2000/ EXES-6000 tie-line method/Selective signal: DTMF signal
Network Section
Network I/F: 10BASE-T/100BASE-TX (Automatic-Negotiation)
Network Protocol: TCP/IP, UDP, ARP, ICMP, HTTP, RTP, IGMP
Audio Packet Transmission System: Unicast/Multicast
Connector: RJ45 connector
Voice Sampling Frequency: 16kHz, 8kHz (Controllable on the software)
Quantifying Bit Number: 16-bit
Voice Encoding Method: Sub-band ADPCM, Cryptosystem
Voice Packet Loss Recovery: Silence insertion
Audio Delay Time: 80ms, 320ms (Controllable on the software)
Indication: Network LNK/ACT indication, Status Lamp, Power-on indication lamp
Others: Firmware update function, System registration data entry hold facility, Time of day hold facility, Reset switch (front panel)
Installation Method: Rack, Desk, Surface mount
Operating Temperature: 32°F to +104°F
Operating Humidity: 90% or less RH (no condensation)
Finish: Pre-coated steel plate, black, 30% gloss
Dimensions: 16.5 (W) × 1.7 (H) × 9.4 (D)in
Weight: 6.2lbs
Accessory: AC power cord (6.6ft) × 1, CD (for PC setting, maintenance use) × 1, Mini-clamp plug (2 pins) × 10, Remote terminal plug (8 pins) × 2, Removable terminal plug (9 pins) × 4, Plastic foot × 4, Screw for fitting plastic foot x 4, Rack mounting bracket × 2, Screw for rack mounting × 4, Wall mounting bracket × 2, Screw for mounting bracket × 8, Screw for wall mounting × 4

*1 0dB = 1V
*2 0dB = 0.775V
*3 Each input and output can be combined in 9 patterns.

N-8000AF
Audio Interface Unit

MAIN FEATURES
- 10/100BaseTX Ethernet network connection
- Occupies one network node (192 max.)
- One MIC/LINE audio line input
- One audio line output
- Eight contact inputs
- Time Synchronization input
- Built-in timer and chime

Power Source: 120V AC, 50/60Hz
Power Consumption: 7W (Max.)
Audio Input: 1 input (transformer isolated), -58dB* to 0dB*, 2kΩ, balanced (MIC/LINE input, controllable on the software) with input volume control knob, removable terminal block (3 pins)
Audio Output: 1 output (transformer isolated), 0dB*, 600Ω, balanced, removable terminal block (3 pins)
Control Input: 8 inputs, no-voltage make contact input, open voltage; 24V DC, short-circuit current: 5mA or less, removable terminal block (10 pins), (1 common terminal for 4 inputs)
Control Output: 8 outputs, relay contact output, contact capacity: 24V DC/2 – 500mA, removable terminal block (16 pins)
Time Sync Input: 1 input, no-voltage make contact input, open voltage: 24V DC, short-circuit current:5mA or less, removable terminal block (2 pins)
Network Section
Network I/F: 10BASE-T/100BASE-TX (Automatic-Negotiation)
Network Protocol: TCP/IP, UDP, ARP, ICMP, HTTP, RTP, IGMP
Audio Packet Transmission System: Unicast, Multicast
Number of Paging Destinations: Unicast (max. 8), Multicast (max. 191)
Connector: RJ45 connector
Voice Sampling Frequency: 16kHz, 8kHz (Controllable on the software)

Quantifying Bit Number: 16-bit
Voice Encoding Method: Sub-band ADPCM, Cryptosystem
Voice Packet Loss Recovery: Silence insertion
Audio Delay Time: 80ms, 320ms (Controllable on the software)
Indication: Network LNK/ACT indication, Status Lamp, Power-on indication lamp, Signal lamp, Peak lamp
Others: Firmware update function, System registration data entry hold facility, Time of day hold facility, Reset switch (front panel)
Setting Method: Rack, Desk, Surface mount
Operating Temperature: 32°F to +104°F
Operating Humidity: 90% RH or less (no condensation)
Finish: Pre-coated steel plate, black, 30% gloss
Dimensions: 8.3 (W) × 1.7 (H) × 10.5 (D)in
Weight: 3.7lbs
Accessory: AC power cord (6.6ft) × 1, CD (for PC setting, maintenance use) × 1, Removable terminal plug (2 pins) × 1, Removable terminal plug (3 pins) × 2, Removable terminal plug (5 pins) × 2, Removable terminal plug (8 pins) × 2, Plastic foot × 4, Screw for fitting plastic foot x 4
Option: Rack mounting bracket: MB-15B-BK (for rack mounting one N-8000AF unit)/MB-15B-J (for rack mounting two N-8000AF units),
Wall mounting bracket: YC-850

*0dB = 1V

N-8000AL
Telephone Interface Unit

MAIN FEATURES
- 10/100BaseTX Ethernet network connection
- Occupies one network node (192 max.)
- Single telephone line allowing an analog telephone to be connected
- Allows any analog telephone to function as a master station.

Power Source: 120V AC, 50/60Hz
Power Consumption: 8W (Max.)
Telephone Interface
Number of Telephone Line: 1 line
Contact Signal Type: DTMF signal
Monitor Function: Line Loop detection
Control Function: Caller ID function
Wiring Method: 1 pair of twisted pair cables
Short-Circuit Current: 120mA
Open Voltage: 24V DC
Ceiling Signal Output Voltage: Max. 80V (0-p) AC (16Hz)
Network Section
Network I/F: 10BASE-T/100BASE-TX (Automatic-Negotiation)
Network Protocol: TCP/IP, UDP, ARP, ICMP, HTTP, RTP, IGMP
Audio Packet Transmission System: Unicast, Multicast
Number of Paging Destinations: Unicast (max. 8), Multicast (max. 191)
Connector: RJ45 connector
Voice Sampling Frequency: 16kHz, 8kHz (Controllable on the software)

Quantifying Bit Number: 16-bit
Voice Encoding Method: Sub-band ADPCM, Cryptosystem
Voice Packet Loss Recovery: Silence insertion
Audio Delay Time: 80ms, 320ms (Controllable on the software)
Indication: Network LNK/ACT indication, Status Lamp, Power-on indication lamp, Line connection indication lamp
Other: Firmware update function, System data hold function, Reset switch (front panel)
Setting Method: Rack, Desk, Surface mount
Operating Temperature: 32°F to +104°F
Operating Humidity: 90% RH or less (no condensation)
Finish: Pre-coated steel plate, black, 30% gloss
Dimensions: 8.3 (W) × 1.7 (H) × 10.5 (D)in
Weight: 3.7lbs
Accessory: AC power cord (6.6ft) × 1, CD (for PC setting, maintenance use) × 1, Mini-clamp plug (2 pins) × 1, Plastic foot × 4, Screw for fitting plastic foot x 4
Option: Rack mounting bracket: MB-15B-BK (for rack mounting one N-8000AL unit)/MB-15B-J (for rack mounting two N-8000AL units), Wall mounting bracket: YC-850

N-8000DI
Direct Select Unit

MAIN FEATURES
- 10/100BaseTX Ethernet network connection
- Occupies one network node (192 max.)
- 32 contact inputs
- 32 contact outputs
- Provides control interface to CCTV, door access and other external systems.
- Events may be activated by contact closures or master station dialing commands.

Power Source: 120V AC, 50/60Hz
Power Consumption: 16W (Max.)
Contact Input: 32 inputs, no-voltage make contact input, open voltage: 24V DC, short-circuit current: 5mA or less, removable terminal block (20 pins), (1 common terminal for 4 inputs)
Contact Output: 32 outputs, relay contact output, contact capacity: 24V DC/2 – 500mA, removable terminal block (32 pins)
Network Section
Network I/F: 10BASE-T/100BASE-TX (Automatic-Negotiation)
Network Protocol: TCP/IP, UDP, ARP, ICMP, HTTP, RTP, IGMP
Connector: RJ45 connector
Indication: Network LNK/ACT indication, Status lamp, Power-on indication lamp, Channel indication lamps (32 channels)

Others: Firmware update function, System registration data entry hold facility, Time of day hold facility, Reset switch (front panel)
Setting Method: Rack, Desk, Surface mount
Operating Temperature: 32°F to +104°F
Operating Humidity: 90% RH or less (no condensation)
Finish: Pre-coated steel plate, black, 30% gloss
Dimensions: 8.3 (W) × 1.7 (H) × 10.5 (D)in
Weight: 6.2lbs
Accessory: AC power cord (6.6ft) × 1, CD (for PC setting, maintenance use) × 1, Removable terminal plug (10 pins) × 4, Removable terminal plug (16 pins) × 4, Plastic foot × 4, Screw for fitting plastic foot x 4, Rack mounting bracket × 2, Screw for rack mounting bracket × 8, Screw for rack mounting × 4
Option: Wall mounting bracket: YC-850

N-8000CO
C/O Interface Unit

MAIN FEATURES
- 10/100BaseTX Ethernet network connection
- Occupies one network node (191 max - at least one node must be a master station or N-8000/8010EX exchange)
- Analog central office line circuit allowing the stations to make and receive calls to and from the telephone line.

Power Source: 120V AC, 50/60Hz
Power Consumption: 7W (Max.)
C/O Interface
Public Switched telephone networks
Number of Lines: 1 line
Selective Signal Type: DTMF signal
Signal System: Compatible with loop start signaling
Wiring Method: 1 pair of twisted pair cables
Network Section
Network I/F: 10BASE-T/100BASE-TX (Automatic-Negotiation)
Network Protocol: TCP/IP, UDP, ARP, ICMP, HTTP, RTP, IGMP
Audio Packet Transmission System: Unicast, Multicast
Number of Paging Destinations: Unicast (max. 8), Multicast (max. 191)
Connector: RJ45 connector
Voice Sampling Frequency: 16kHz, 8kHz (Controllable on the software)
Quantifying Bit Number: 16-bit
Voice Encoding Method: Sub-band ADPCM, Cryptosystem

Voice Packet Loss Recovery: Silence insertion
Audio Delay Time: 80ms, 320ms (Controllable on the software)
Indication: Network LNK/ACT indication, Status Lamp, Power-on indication lamp, Line connection indication lamp
Other: Firmware update function, System data hold function, Reset switch (front panel)
Setting Method: Rack, Desk, Surface mount
Operating Temperature: 32°F to +104°F
Operating Humidity: 90% RH or less (no condensation)
Finish: Pre-coated steel plate, black, 30% gloss
Dimensions: 8.3 (W) × 1.7 (H) × 10.5 (D)in
Weight: 3.7lbs
Accessory: AC power cord (6.6ft) × 1, CD (for PC setting, maintenance use) × 1, Mini-clamp plug (2 pins) × 2, Plastic foot × 4, Screw for fitting plastic foot x 4
Option: Rack mounting bracket: MB-15B-BK (for rack mounting one N-8000CO unit)/MB-15B-J (for rack mounting two N-8000CO units),
Wall mounting bracket: YC-850

N-8000RS
Sub-Station Interface Unit

MAIN FEATURES
- 10/100BaseTX Ethernet network connection
- Occupies one network node (191 max - at least one node must be a master station or N-8000/8010EX exchange)
- Up to 16 substations connectable using twisted pair shielded cable
- Speech links: 2

Power Source: 120V AC, 50/60Hz
Power Consumption: 35W(at rated), 45W(max.)
Interface Section for station
Number of lines: 16 lines
Number of speech link: 2 link
Transmission System: Analog baseband
Transmission Range: 500m/0.5mm (AGW24), 800m/0.65mm (AGW21), 1300m/0.9mm (AGW19)
Speech Method: Half-duplex conversation by way of voice switch
Connecter: Removable terminal block (3 pins)
Wiring method: Two-core shielded cable
Audio Output: Max. 1W/line (conversation), Max. 0.5W/line (paging)
Feeding Voltage/Current: 22V DC, Max. 30mA
Control Signal: Call in button detection, privacy button detection, hook detection
Network Section
Network I/F: 10BASE-T/100BASE-TX (Automatic-Negotiation)
Network Protocol: TCP/IP, UDP, ARP, ICMP, HTTP, RTP, IGMP
Audio Packet Transmission System: Unicast/Multicast
Number of paging destinations: 0, *Reception only
Connector: RJ45 connector

Voice Sampling Frequency: 16kHz, 8kHz (Controllable on the software)
Quantifying Bit Number: 16-bit
Voice Encoding Method: Sub-band ADPCM, Cryptosystem
Voice Packet Loss Recovery: Silence insertion
Audio Delay Time: 80ms, 320ms (Controllable on the software)
Indication: Network LNK/ACT indication, Status Lamp, Power-on indication lamp
Other: Firmware update function, System data hold function, Reset switch (front panel), Forced air cooling
Setting Method: Rack, Desk, Surface mount
Operating Temperature: 32°F to +104°F
Operating Humidity: 90% or less RH (no condensation)
Finish: Pre-coated steel plate, black, 30% gloss
Dimensions: 16.5 (W) × 1.7 (H) × 12.8 (D)in
Weight: 8.6lbs
Accessory: AC power cord (6.6ft) × 1, CD (for PC setting, maintenance use) × 1, Removable terminal plug (3 pins) × 16, Plastic foot × 4, Screw for fitting plastic foot x 4, Rack mounting bracket × 2, Screw for rack mounting × 4, Wall mounting bracket × 2, Screw for mounting bracket × 8, Screw for rack mounting × 4
Option: Wall mounting bracket: YC-850

N-8010RS
Sub-Station Interface Unit

MAIN FEATURES
- 10/100BaseTX Ethernet network connection
- Occupies one network node (191 max - at least one node must be a master station or N-8000/8010EX exchange)
- Up to 16 substations connectable using twisted pair shielded cable
- Speech links: 1

Power Source: 120V AC, 50/60Hz
Power Consumption: 26W(at rated), 32W(max.)
Interface Section for station
Number of lines: 16 lines
Number of speech link: 1 link
Transmission System: Analog baseband
Transmission Range: 500m/0.5mm (AGW24), 800m/0.65mm (AGW21), 1300m/0.9mm (AGW19)
Speech Method: Half-duplex conversation by way of voice switch
Connecter: Removable terminal block (3 pins)
Wiring method: Two-core shielded cable
Audio Output: Max. 1W/line (conversation), Max. 0.5W/line (paging)
Feeding Voltage/Current: 22V DC, Max. 30mA
Control Signal: Call in button detection, privacy button detection, hook detection
Network Section
Network I/F: 10BASE-T/100BASE-TX (Automatic-Negotiation)
Network Protocol: TCP/IP, UDP, ARP, ICMP, HTTP, RTP, IGMP
Audio Packet Transmission System: Unicast/Multicast
Number of paging destinations: 0, *Reception only
Connector: RJ45 connector

Voice Sampling Frequency: 16kHz, 8kHz (Controllable on the software)
Quantifying Bit Number: 16-bit
Voice Encoding Method: Sub-band ADPCM, Cryptosystem
Voice Packet Loss Recovery: Silence insertion
Audio Delay Time: 80ms, 320ms (Controllable on the software)
Indication: Network LNK/ACT indication, Status Lamp, Power-on indication lamp
Other: Firmware update function, System data hold function, Reset switch (front panel), Forced air cooling
Setting Method: Rack, Desk, Surface mount
Operating Temperature: 32°F to +104°F
Operating Humidity: 90% or less RH (no condensation)
Finish: Pre-coated steel plate, black, 30% gloss
Dimensions: 16.5 (W) × 1.7 (H) × 12.8 (D)in
Weight: 8.6lbs
Accessory: AC power cord (6.6ft) × 1, CD (for PC setting, maintenance use) × 1, Removable terminal plug (3 pins) × 16, Plastic foot × 4, Screw for fitting plastic foot x 4, Rack mounting bracket × 2, Screw for rack mounting × 4, Wall mounting bracket × 2, Screw for mounting bracket × 8, Screw for rack mounting × 4
Option: Wall mounting bracket: YC-850

N-8400RS
Sub-Station Interface Unit

MAIN FEATURES
- 10/100BaseTX Ethernet network connection
- Occupies one network node (191 max - at least one node must be a master station or N-8000/8010EX exchange)
- Up to 16 substations connectable using 2 sets of twisted pair cables
- Speech links: 1

Power Source: 120V AC, 50/60Hz
Power Consumption: 35W(at rated), 50W(max.)
Interface Section for station
Number of lines: 16 lines
Number of speech link: 2 link
Transmission System: Analog baseband
Transmission Range: 1000m/0.5mm (AGW24), 1500m/0.65mm (AGW21), 2000m/0.9mm (AGW19)
Speech Method: Half-duplex conversation by way of voice switch (Hand-free), Full-duplex (Handset)
Connecter: Removable terminal block (4 pins)
Wiring method: 2 sets of twisted pair cable
Audio Output: Max. 1W/line (conversation), Max. 0.5W/line (paging)
Feeding Voltage/Current: 22V DC, Max. 30mA
Control Signal: Call in button detection, privacy button detection, hook detection
Network Section
Network I/F: 10BASE-T/100BASE-TX (Automatic-Negotiation)
Network Protocol: TCP/IP, UDP, ARP, ICMP, HTTP, RTP, IGMP
Audio Packet Transmission System: Unicast/Multicast
Number of paging destinations: 0, *Reception only

Connector: RJ45 connector
Voice Sampling Frequency: 16kHz, 8kHz (Controllable on the software)
Quantifying Bit Number: 16-bit
Voice Encoding Method: Sub-band ADPCM, Cryptosystem
Voice Packet Loss Recovery: Silence insertion
Audio Delay Time: 80ms, 320ms (Controllable on the software)
Indication: Network LNK/ACT indication, Status Lamp, Power-on indication lamp
Other: Firmware update function, System data hold function, Reset switch (front panel), Forced air cooling
Setting Method: Rack, Desk, Surface mount
Operating Temperature: 32°F to +104°F
Operating Humidity: 90% or less RH (no condensation)
Finish: Pre-coated steel plate, black, 30% gloss
Dimensions: 16.5 (W) × 1.7 (H) × 12.8 (D)in
Weight: 8.8lbs
Accessory: AC power cord (6.6ft) × 1, CD (for PC setting, maintenance use) × 1, Removable terminal plug (4 pins) × 16, Plastic foot × 4, Screw for fitting plastic foot x 4, Rack mounting bracket × 2, Screw for rack mounting × 4, Wall mounting bracket × 2, Screw for mounting bracket × 8, Screw for rack mounting × 4
Option: Wall mounting bracket: YC-850

Stations

IP Master Stations

N-8600MS
IP Multifunctional Master Station

MAIN FEATURES
- System Allows Full-duplex conversation in Hands-free mode with new stations
- External mic and headset connections for hands free operation
- LCD, speed-dial, Power-over-Ethernet

Power Source: Power supply device that complies with IEEE802.3af standard or 12V DC (supplied from the AC adapter (option))
Power Consumption: Use of the AC adapter (12V DC: 2.5W (station only))
Use of the PoE (48V DC): 3W
Speech Method: Hands-free or handset conversation
Audio Frequency Range: 300Hz – 7kHz
Hands-free: Speaker: 5.7cm cone-type, maximum output 0.5W, 8Ω/ Mic.: Omni-directional electret condenser microphone
Handset: Receive path: Dynamic type/Send path: Electret condenser microphone
Hands Terminal: Speaker: 150Ω, 3.5mm mini jack
Microphone: -49dB*, 3.5mm mini jack
External Speaker Terminal: Maximum output 0.5W, 8Ω, screwless connector (2 pins)
Network Section
Network I/F: 10BASE-T/100BASE-TX (Automatic-Negotiation)
Network Protocol: TCP/IP, UDP, ARP, ICMP, HTTP, RTP, IGMP
Audio Packet Transmission System: Unicast/Multicast
Number of paging destinations: Unicast (max. 16), Multicast (max. 191)
Connector: LAN: RJ45 connector (PoE compatible)
Voice Sampling Frequency: 16kHz, 8kHz (Controllable on the software)
Quantifying Bit Number: 16-bit
Voice Encoding Method: Sub-band ADPCM, Cryptosystem
Voice Packet Loss Recovery: Silence insertion
Audio Delay Time: 80ms, 320ms (Controllable on the software)
Display: LCD alphanumeric characters (16 characters × 2 lines)
Indication: Status lamp
Installation Method: Desk/Surface mounted master station (When mounting to the wall, use the optional YC-280.)
Operating Temperature: 32°F to +104°F
Operating Humidity: 90% RH or less (no condensation)
Finish: Body, Handset: ABS resin, gray
Dimensions: 5.8 (W) × 8.2 (H) × 2.8 (D)in (excluding a curl cord section)
Weight: 1.7lbs
Accessory: CD (for PC setting, maintenance use) × 1
Option: Wall mounting bracket: YC-280/AC adapter: AD-1215P

*0dB = 1V

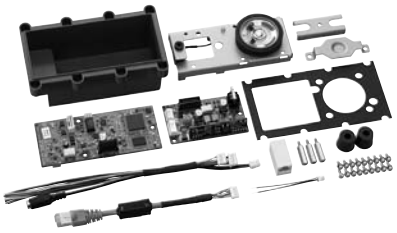
N-8510MS
IP Standard Master Station

MAIN FEATURES
- Handset duplex communication
- Connects directly to network (10/100Base TX)
- Occupies one network node (192 max)
- Power-over-Ethernet compatible or optional power supply, model AD-1210P
- Two RJ-45 network connectors (one for network, one for PC)
- Contact input terminal
- Optional wall-mount bracket, model YC-280

Power Source: Power supply device that complies with IEEE802.3af standard or 12V DC (supplied from the AC adapter (option))
Power Consumption: 4.2W (at rated), 6W (max.)
Speech Method: Hands-free or handset conversation
Audio Frequency Range: 300Hz – 7kHz
Hands-free: Speaker: 0.6W, 8Ω, 5.7cm cone-type/ Mic.: Omni-directional electret condenser microphone
Handset: Receive path: Dynamic type/Send path: Electret condenser microphone
External Control Input Terminal: No-voltage contact input, open voltage: 5V DC, short-circuit current: 5mA or less, screwless connector (2P)
Network Section
Network I/F: 10BASE-T/100BASE-TX (Automatic-Negotiation)
Network Protocol: TCP/IP, UDP, ARP, ICMP, HTTP, RTP, IGMP
Audio Packet Transmission System: Unicast/Multicast
Number of paging destinations: Unicast (max.16), Multicast (max. 191)
Connector: LAN: RJ45 connector (PoE compatible)/ PC: RJ45 connector (not-compatible with PoE)
Voice Sampling Frequency: 16kHz, 8kHz (Controllable on the software)
Quantifying Bit Number: 16-bit
Voice Encoding Method: Sub-band ADPCM, Cryptosystem
Voice Packet Loss Recovery: Silence insertion
Audio Delay Time: 80ms, 320ms (Controllable on the software)
Indication: Status lamp
Installation Method: Desk/Surface mounted master station (When mounting to the wall, use the optional YC-280.)
Operating Temperature: 32°F to +104°F
Operating Humidity: 90% or less RH (no condensation)
Finish: Body, Handset: ABS resin, gray
Dimensions: 5.8 (W) × 8.2 (H) × 2.8 (D)in (excluding a curl cord section)
Weight: 1.6lbs
Accessory: CD (for PC setting, maintenance use) × 1
Option: Wall mounting bracket: YC-280/AC adapter: AD-1215P

*0dB = 1V

N-8640SB
IP Door Station Board



MAIN FEATURES
PCB KIT VERSION OF IP-65 RATED OUTDOOR DOOR STATION
- Chemical resistant for use in industrial/harsh environments.
- 4 contact outputs /one input for use with access controls systems and remote dialers.
- External speaker connection 0.5W @ 8 ohms.
- Allows Full-duplex conversation with master stations.

Power Source: Power supply device that complies with IEEE802.3af standard or 12V DC (supplied from the AC adapter (option))
Power Consumption: Use of the AC adapter (12V DC: 3.5W (station only))
Use of the PoE (48V DC): 5W
Speech Method: Hands-free conversation
Audio Frequency Range: 300Hz – 7kHz
Hands-free: Speaker: maximum output 0.5W, 8Ω, 5.7cm cone-type
Mic.: Omni-directional electret condenser microphone
Contact Input: 1 channel, no-voltage make contact input, open circuit voltage: 5V DC. short circuit current: 10mA or less, unterminated ends
Contact Output: Open collector output, 4 channels, withstand voltage: 30V DC, control current: Max. 50mA (4 output 1COMMON), unterminated ends
Relay contact output, 1 channel, withstand voltage: 30V DC, control current: 500mA, unterminated ends
External Speaker Terminal: Maximum output 0.5W, 8Ω, unterminated ends

Network Section
Network I/F: 10BASE-T/100BASE-TX (Automatic-Negotiation)
Network Protocol: TCP/IP, UDP, ARP, ICMP, HTTP, RTP, IGMP
Audio Packet Transmission System: Unicast/Multicast
Number of paging destinations: 0, *Reception only
Connector: LAN: RJ45 connector (PoE compatible)
Voice Sampling Frequency: 16kHz, 8kHz (Controllable on the software)
Quantifying Bit Number: 16-bit
Voice Encoding Method: Sub-band ADPCM, Cryptosystem
Voice Packet Loss Recovery: Silence insertion
Audio Delay Time: 80ms, 320ms (Controllable on the software)
Operating Temperature: -14°F to +122°F
Operating Humidity: 90% RH or less (no condensation)
Dimensions: 3.1 (W) × 5.3 (H) × 2.1 (D)in (Complete assembly of component parts)
Weight: 1lbs (total weight)
Option: AC adapter: AD-1210P, AD-1215P

Note: For the assembly procedure and operation panel design, refer to the instruction manual supplied with the unit.

N-8540WP
IP Door Station

MAIN FEATURES
OUTDOOR IP SUB STATION
- Half-Duplex (aka: Simplex) communication is supported by this station
- Connects directly to network (10/100Base TX)
- Occupies one network node (192 max.)
- Power-over-Ethernet compatible or optional power supply, model AD-1210P
- Hands-free duplex communication
- Separate mic and speaker
- Control output (open collector)
- Optional flush-mount back-box, model YC-150
- Optional surface-mount back-box, model YS-13A

N-8640DS
IP Door Station

MAIN FEATURES
IP-65 RATED OUTDOOR DOOR STATION
- Chemical resistant for use in industrial/ harsh environments.
- 4 contact outputs /one input for use with access controls systems and remote dialers.
- External speaker connection 0.5W @ 8 ohms.
- Allows Full-duplex conversation with master stations.

Power Source: Power supply device that complies with IEEE802.3af standard or 12V DC (supplied from the AC adapter (option))
Power Consumption: Use of the AC adapter (12V DC: 3.5W (station only))
Use of the PoE (48V DC): 5W
Speech Method: Hands-free conversation
Audio Frequency Range: 300Hz – 7kHz
Hands-free: Speaker: maximum output 0.5W, 8Ω, 5.7cm cone-type
Mic.: Omni-directional electret condenser microphone
Contact Input: 1 channel, no-voltage make contact input, open circuit voltage: 5V DC. short circuit current: 10mA or less, unterminated ends
Contact Output: Open collector output, 4 channels, withstand voltage: 30V DC, control current: Max. 50mA (4 output 1COMMON), unterminated ends
Relay contact output, 1 channel, withstand voltage: 30V DC, control current: 500mA, unterminated ends
External Speaker Terminal: Maximum output 0.5W, 8Ω, unterminated ends
Network Section
Network I/F: 10BASE-T/100BASE-TX (Automatic-Negotiation)
Network Protocol: TCP/IP, UDP, ARP, ICMP, HTTP, RTP, IGMP
Audio Packet Transmission System: Unicast/Multicast
Number of paging destinations: 0, *Reception only

Connector: LAN: RJ45 connector (PoE compatible)
Voice Sampling Frequency: 16kHz, 8kHz (Controllable on the software)
Quantifying Bit Number: 16-bit
Voice Encoding Method: Sub-band ADPCM, Cryptosystem
Voice Packet Loss Recovery: Silence insertion
Audio Delay Time: 80ms, 320ms (Controllable on the software)
Indication: Status lamp
Installation Method: Flush-mount/Surface-mount
Operating Temperature: -10°C to +50°C
Operating Humidity: 90% RH or less (no condensation)
Housing Protection: BS EN62262: 2002: IK02 equivalent
Dust/Water Protection: IP65 (Note that panel edges must be sealed at installation)
Finish: Panel: Stainless steel (SUS304), hairline/Call button: Metal
Dimensions: 4.5 (W) × 6.3 (H) × 2.3 (D)in
Weight: 1.7lbs
Accessory: Box mounting screw (No.6-32UNC x 18) × 4, Box mounting screw(M4 x 20) x 4, Waterproof washer × 4, LAN coupler × 1
Option: AC adapter: AD-1215P
Applicable Box (option): For wall mount: Wall mount Box YS-13A
For flush-mount: 3-gang electrical box or Back Box YC-150

*0dB = 1V

2-Wire Type Stations (works with N-8000EX/N-8010EX)

N-8000MS
Multifunctional Master Station

MAIN FEATURES
- Full-Duplex (aka: Duplex) communication is supported by this station
- Two-wire connection to N-8000EX or N-8010EX Exchange
- Alphanumeric LCD display (32 character)
- Handset or hands-free duplex communication
- Eight user-programmable speed dial keys
- Headset terminal
- External speaker terminal (0.6 W / 8 ohms)
- Optional wall-mount bracket, model YC-280

Power Source: 48V DC (supplied from the network intercom exchange)
Power Consumption: 1.8W (at rated), 2.4W (max.)
Wiring Method: 1 set of twisted pair cable
Transmission System: 2 wire 160kbps echo canceller transmission system
Signal Level: Under 0dB*
Speech Method: Hands-free or handset conversation
Audio Frequency Range: 300Hz – 7,kHz
Transmission Range: Max. 1500m (0.65mm. Loop resistance 170Ω)
Hands-free: Speaker: 0.6W, 8Ω, 5.7cm cone-type/Mic.: Omni-directional electret condenser microphone
Handset: Receive path: Dynamic type/Send path: Electret condenser microphone
Display: LCD: Alphanumeric characters (16 characters × 2 lines)

Line Connecting Terminal: RJ-11 modular jack
Handset Terminal: Speaker: 3mW, 32Ω/ Microphone: -49dB*, 3.5mm mini jack
External Speaker Terminal: 0.6W, 8 ohms, screwless connector (2 pins)
Installation Method: Desk/Surface mounted master station (When mounting to the wall, use the optional YC-280.)
Operating Temperature: 32°F to +104°F
Operating Humidity: Under 90% RH (no condensation)
Finish: Body, Handset: ABS resin, gray
Dimensions: 5.8 (W) × 8.2 (H) × 2.8 (D)in (excluding a curl cord section)
Weight: 1.8lbs
Accessory: Connecting cord (9.8ft) × 1
Option: Wall mounting bracket: YC-280

*0dB = 1V

N-8010MS
Standard Master Station

MAIN FEATURES
- Full-Duplex (aka: Duplex) communication is supported by this station
- Two-wire connection to N-8000EX or N-8010EX Exchange
- Handset or hands-free duplex communication
- Optional wall-mount bracket, model YC-280

Power Source: 48V DC (supplied from the network intercom exchange)
Power Consumption: 1.8W (at rated), 2.4W (max.)
Wiring Method: 1 set of twisted pair cable
Transmission System: 2 wire 160kbps echo canceller transmission system
Signal Level: Under 0dB*
Speech Method: Hands-free or handset conversation
Audio Frequency Range: 300Hz – 7kHz
Transmission Range: Max. 1500m (0.65mm. Loop resistance 170Ω)
Hands-free: Speaker: 0.6W, 8Ω, 5.7cm cone-type/ Mic.: Omni-directional electret condenser microphone
Handset: Receive path: Dynamic type/Send path: Electret condenser microphone
Indication: Status lamp
Line Connecting Terminal: RJ-11 modular jack

Installation Method: Desk/Surface mounted master station (When mounting to the wall, use the optional YC-280.)
Operating Temperature: 32°F to +104°F
Operating Humidity: Under 90% RH (no condensation)
Finish: Body/Handset: ABS resin, gray
Dimensions: 5.8 (W) × 8.2 (H) × 2.8 (D)in (excluding a curl cord section)
Weight: 1.5lbs
Accessory: Connecting cord (9.8ft) × 1
Option: Wall mounting bracket: YC-280

*0dB = 1V

N-8011MS
Standard Hands-free Master Station

MAIN FEATURES
- Full-Duplex (aka: Duplex) communication is supported by this station (handset mode only)
- Two-wire connection to N-8000EX or N-8010EX Exchange
- Hands-free duplex communication

Power Source: 48V DC (supplied from the network intercom exchange)
Power Consumption: 1.8W (at rated), 2.4W (max.)
Wiring Method: 1 set of twisted pair cable
Transmission System: 2 wire 160kbps echo canceller transmission system
Signal Level: Under 0dB*
Speech Method: Hands-free conversation
Audio Frequency Range: 300Hz – 7kHz
Transmission Range: Max. 1500m (0.65mm. Loop resistance 170Ω)
Hands-free: Speaker: 0.6W, 8Ω, 5.7cm cone-type/Mic.: Omni-directional electret condenser microphone
Indication: Status lamp
Line Connecting Terminal: RJ-11 modular jack
Installation Method: Desk/Surface mounted master station (When mounting to the wall, use the optional YC-290.)
Operating Temperature: 32°F to +104°F
Operating Humidity: Under 90% RH (no condensation)
Finish: Body: ABS resin, gray
Dimensions: 3.6 (W) × 7.7 (H) × 2.2 (D)in
Weight: 1lbs
Accessory: Connecting cord (9.8ft) × 1
Option: Wall mounting bracket: YC-290

*0dB = 1V

N-8020MS
Industrial-Use Master Station

MAIN FEATURES
- Full-Duplex (aka: Duplex) communication is supported by this station
- Heavy duty dustproof and waterproof construction (IP54 rating)
- Two-wire connection to N-8000EX or N-8010EX Exchange
- Handset or hands-free duplex communication
- External speaker terminal (0.6 W / 8 ohms)
- Control output

Power Source: 48V DC (supplied from the network intercom exchange)
Power Consumption: 1.8W (at rated), 2.4W (max.)
Wiring Method: 1 set of twisted pair cable
Transmission System: 2 wire 160kbps echo canceller transmission system
Signal Level: Under 0dB*
Speech Method: Hands-free or handset conversation
Audio Frequency Range: 300Hz – 7kHz
Transmission Range: Max. 1500m (0.65mm. Loop resistance 170Ω)
Hands-free: 0.6W, 8Ω, 5.7cm cone-type/Mic.: Omni-directional electret condenser microphone
Handset: Receive path: Dynamic type/Send path: Electret condenser microphone
Dial-in Contact Output: Open collector output (The contacts have polarity.)/Withstand voltage: Max. 30V DC, Control current: Max. 50mA, screwless connector (2 pins)
Indication: Status lamp
Line Connecting Terminal: RJ-11 modular jack
External Speaker Terminal: 0.6W, 8 ohms, screwless connector (2P)
Installation Method: Desk/Surface mounted master station (When mounting to the wall, use the optional YC-280.)
Operating Temperature: -14°F to +122°F
Operating Humidity: Under 90% RH (no condensation)
Dust/Water Protection: IP54
Finish: Body, Handset: ABS resin, gray
Dimensions: 6.7 (W) × 8.7 (H) × 3.9 (D)in (excluding a curl cord and projection sections)
Weight: 2.2lbs
Accessory: Rubber cap × 2
Option: Wall mounting bracket: YC-280

*0dB = 1V

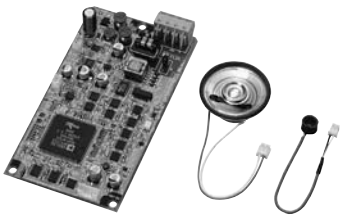
N-8031MS
Flush-Mount Hands-Free Master Station

MAIN FEATURES
PANEL-MOUNT MASTER STATION
- Full-Duplex (aka: Duplex) communication is supported by this station (handset mode only)
- Two-wire connection to N-8000EX or N-8010EX Exchange
- Hands-free duplex communication
- External dial inputs (7, 8, 9 and C keys)

Power Source: 48V DC (supplied from the network intercom exchange)
Power Consumption: 1.8W (rated), 2.4W (max.)
Wiring Method: 1 set of twisted pair cable
Transmission System: 2 wire 160kbps echo canceller transmission system
Signal Level: Under 0dB*
Speech Method: Hands-free conversation (Handset conversation can be established in conjunction with the RS-191(option))
Audio Frequency Range: 300Hz – 7kHz
Transmission Range: Max. 1500m (0.65mm. Loop resistance 170Ω)
Hands-free: Speaker: 0.6W, 8Ω, 5.7cm cone-type/Mic.: Omni-directional electret condenser microphone
Indication: Status lamp
Line Connecting Terminal: Pin header (2 pins)
External Dial Input: No-voltage make contact input, screwless connector (5 pins)
Installation Method: Flush-mount/Surface-mount
Operating Temperature: 32°F to +104°F
Operating Humidity: Under 90% RH (no condensation)
Finish: Panel: Stainless steel (SUS304), hairline
Dimensions: 4.5 (W) × 10 (H) × 2.2 (D)in
Weight: 1.9lbs
Accessory: Box mounting screw (No.6-32UNC × 18) × 4, Box mounting screw (M4 × 25) × 4, Removable terminal plug (2 pins, preinstalled on the unit) × 1, Handset jumper (8 pins, preinstalled on the unit) × 1, Ferrite clamp × 1
Option: For flush-mount: Back Box YC-241/Wall surface-mount: Wall mount Box YC-251

*0dB = 1V

N-8050SB
Door Station Board



MAIN FEATURES
INDOOR SUB-STATION PCB
- Full-Duplex (aka: Duplex) communication is supported by this station
- N-8050DS PCB for custom station applications
- Speaker and microphone included
- Control output (open collector)
- Call switch input
- LED Status Indicator output

Power Source: 48V DC (supplied from the IP network intercom exchange (option))
Power Consumption: 1.8W (rated), 2.4W (max.)
Wiring Method: Non-polar one pair stranded wire system
Transmission System: 2 wire 160kbps echo canceller transmission system
Signal Level: Under 0dB*
Speech Method: Hands-free conversation
Audio Frequency Range: 300Hz – 7kHz
Transmission Range: Max. 1500m (0.65mm. Loop resistance 170Ω)
Hands-free: Speaker: 1W, 8Ω, 3.5cm cone-type/Mic. (accessory): Omni-directional electret condenser microphone
Contact Output: Open collector output, withstand voltage: Max. 30V DC, control current: Max. 50mA, one shot: can be set from 1 to 9 sec, screw terminal (polarized)
Line Connecting Terminal: 2 wire, screw terminal (non-polar)
Status Indicator LED Connecting Terminal: Solderless connector (5 pins, male), voltage: 5V, maximum load current: 4.1mA
Call Button Connecting Terminal: Solderless connector (5 pins, male), open voltage: 3.3V DC, short-circuit current: 1.5mA
Operating Temperature: -14°F to +122°F
Operating Humidity: Under 90% RH (no condensation)
Dimensions: 2.6 (W) × 5.1 (H) × 1 (D)in
Weight: 0.2lbs (including accessories)
Accessory: Hands-free speaker (with connection cord) × 1, Hands-free microphone (with connection cord) × 1

*0dB = 1V

N-8033MS
Flush-Mount Master Station

MAIN FEATURES
- Especially for hospitals
- IP-65 rated outdoor in-wall Master Station.
- Chemical resistant for use in industrial/harsh environments.
- One input for use with foot switch dialing.
- Works with N-8000EX & N-8010EX using single twisted pair connection.

Power Source: 48V DC (supplied from the IP network intercom exchange)
Power Consumption: 1.8W (rated), 2.4W (max.)
Wiring Method: 1 set of twisted pair cable
Transmission System: 2 wire 160kbps echo canceller transmission system
Signal Level: Under 0dB*
Speech Method: Hands-free conversation
Audio Frequency Range: 300Hz – 7kHz
Transmission Range: Max. 1500m (0.65mm. Loop resistance 170Ω)
Hands-free: Speaker: 0.6W, 8Ω, 5.7cm cone-type
Mic.: Omni-directional electret condenser microphone
Indication: Status lamp
Line Connecting Terminal: Pin header (2 pins)

External Dial Input: No-voltage make contact input, screwless connector (5 pins)
Installation Method: Flush-mount/Surface-mount
Operating Temperature: -10°C to +40°C
Operating Humidity: 90% or less RH (no condensation)
Dust/Water Protection: IP54 (Note that panel edges must be sealed at installation)
Resistance to Environment: Passed our chemical-resistant test
Finish: Panel: Stainless steel (SUS304), hairline
Dimensions: 4.5 (W) × 10 (H) × 2 (D)in
Weight: 1.9lbs
Accessory: Box mounting screw (M4 × 25) × 4, Acoustic absorbent × 1, Removable terminal plug (2 pins, preinstalled on the unit) × 1
Option: Back Box YC-841

*0dB = 1V

N-8050DS
Door Station

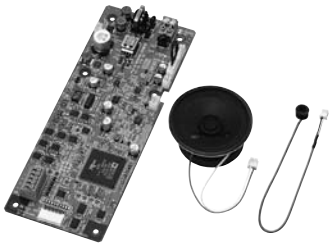
MAIN FEATURES
INDOOR SUB-STATION
- Half-Duplex (aka: Duplex) communication is supported by this station
- Two-wire connection to N-8000EX or N-8010EX Exchange
- Hands-free duplex communication
- Separate mic and speaker
- Control output (open collector)
- IP-54 rated

Power Source: 48V DC (supplied from the IP network intercom exchange (option))
Power Consumption: 1.8W (rated), 2.4W (max.)
Wiring Method: 1 set of twisted pair cable
Transmission System: 2 wire 160kbps echo canceller transmission system
Signal Level: Under 0dB*
Speech Method: Hands-free conversation
Audio Frequency Range: 300Hz – 7kHz
Transmission Range: Max. 1500m (0.65mm. Loop resistance 170Ω)
Hands-free: Speaker: 1W, 8Ω, 3.5cm cone-type
Mic.: Omni-directional electret condenser microphone
Contact Output: Open collector output, withstand voltage: Max. 30V DC, control current: Max. 50mA, one shot: can be set from 1 to 9 sec, screw terminal (polarized)

Indication: Status lamp
Line Connecting Terminal: 2 wire, screw terminal (non-polar)
Installation Method: Flush-mount/Surface-mount
Operating Temperature: -14°F to +122°F
Operating Humidity: Under 90% RH (no condensation)
Housing Protection: BS EN62262: 2002: IK02 equivalent
Dust/Water Protection: IP54 (Note that panel edges must be sealed at installation)
Finish: Panel: Stainless steel (SUS304), hairline/Call button: Metal
Dimensions: 4.5 (W) × 6.4 (H) × 2.2 (D)in
Weight: 1.5lbs
Accessory: Box mounting screw (No.6-32UNC × 18) × 4, Box mounting screw (M4 × 25) × 4, Ferrite clamp × 1
Applicable Box (option): For flush-mount: 3-gang electrical box or Back Box YC-150/For wall mount: Wall mount Box YS-13A

*0dB = 1V

N-8031SB
Master Station Board



MAIN FEATURES
PANEL-MOUNT MASTER STATION PCB
- Full-Duplex (aka: Duplex) communication is supported by this station
- Speaker and microphone included
- External dial inputs (7, 8, 9 and C keys) plus switch matrix connection
- LED Status Indicator output

Power Source: 48V DC (supplied from the network intercom exchange (option))
Power Consumption: 1.8W (rated), 2.4W (max.)
Wiring Method: Non-polar one pair stranded wire system
Transmission System: 2 wire 160kbps echo canceller transmission system
Signal Level: Under 0dB*
Speech Method: Hands-free conversation (Handset conversation can be established in conjunction with the RS-191(option))
Audio Frequency Range: 300Hz – 7kHz
Transmission Range: Max. 1500m (0.65mm. Loop resistance 170Ω)
Hands-free: Speaker: 0.6W, 8Ω, 5.7cm cone-type/Mic (accessory): Omni-directional electret condenser microphone
Line Connecting Terminal: Pin header (2 pins)

Status Indicator LED Connecting Terminal: Solderless connector (2 pins, male), voltage: 5V, maximum load current: 5mA
Dial Input: Solderless connector (10 pins, male), open voltage: 3.3V DC, short-circuit current: 1mA
External Dial Input: No-voltage make contact input, open voltage: 5V DC, short-circuit current: 1mA, screwless connector (5 pins)
Operating Temperature: 32°F to +104°F
Operating Humidity: Under 90% RH (no condensation)
Dimensions: 2.8 (W) × 7.3 (H) × 0.8 (D)in
Weight: 0.5lbs (including accessories)
Accessory: Removable terminal plug (2 pins, preinstalled on the unit) × 1, Handset jumper (8 pins, preinstalled on the unit) × 1, Ferrite clamp × 1, Hands-free speaker (with connection cord) × 1, Hands-free microphone (with connection cord) × 1
Option: Handset: RS-191

*0dB = 1V

Q-N-8050WP
Door Station

MAIN FEATURES
OUTDOOR SUB-STATION
- Half-Duplex (aka: Duplex) communication is supported by this station
- Two-wire connection to N-8000EX or N-8010EX Exchange
- Hands-free duplex communication
- Separate mic and speaker
- Control output (open collector)
- IP-54 rated
- Optional flush-mount back-box, model YC-150
- Optional surface-mount back-box, model YS-13A

RS-191
Option Handset

Handset Receiver: Dynamic type
Handset Transmitter: Electret condenser type
Operating Temperatures: 32°F to +104°F (temperature range not to freeze the speaker and switch)
Finish: ABS resin, pale white
Dimensions: 4.6 (W) × 8.7 (H) × 2.8 (D)in
Weight: 0.7lbs
Accessory: Box mounting screw (No.6-32UNC × 18) × 4, Box mounting screw (M4 × 25) × 4

2-Core Shielded Type Stations (works with N-8000RS/N-8010RS)

RS-150 Substation (Indoor type)

MAIN FEATURES

ECONOMY INDOOR REMOTE SUB-STATION

- Provides half-duplex communication.
- Hairline brushed stainless steel faceplate, #14 Gauge.
- Connects to N-8000RS/N-8010RS.
- May be programmed to communicate with a single master station.
- Mounts in two-gang, 2" deep electrical box with adapter ring (supplied by other vendors).
- Up to (16) sixteen RS-1XO Remote Stations can be used per N-8000RS/N-8010RS exchange.

Rated Input: 1W
Rated Impedance: 625Ω (1W/25V)
Internal Speaker: 4cm cone-type
Wiring: Two-core shielded cable
Transmission Range: 0.5km /0.5mm (AWG24)
0.8km /0.65mm (AWG22)
1.3km /0.9mm (AWG19)
Operating Temperatures: 14°F to +122°F (Temperature range not to freeze the speaker and switch)
Finish: Panel: Stainless steel, hairline/
Call button: Resin
Dimensions: 4.7 (W) × 4.7 (H) × 1.9 (D)in
Weight: 0.9lbs
Accessory: Box mounting screw (No.6-32UNC × 18) × 4, Box mounting screw (M4 × 25) × 4

RS-160 Substation (Indoor Vandal-Resistant type)

MAIN FEATURES

- Provides half-duplex communication.
- Heavy-duty brushed stainless steel faceplate, #11 Gauge.
- Vandal resistant call button and speaker plate.
- May be programmed to communicate with a single master station.
- Connects to N-8000RS/N-8010RS.
- Mounts in two-gang, 2.25" deep electrical box with adapter ring (supplied by other vendors).
- Up to (16) sixteen RS-1XO Remote Stations can be used per N-8000RS/N-8010RS exchange.

Rated Input: 1W
Rated Impedance: 625Ω (1W/25V)
Internal Speaker: 4cm cone-type
Wiring: Two-core shielded cable
Transmission Range: 0.5km /0.5mm (AWG24)
0.8km /0.65mm (AWG22)
1.3km /0.9mm (AWG19)
Operating Temperatures: 14°F to +122°F (Temperature range not to freeze the speaker and switch)
Finish: Panel: Stainless steel, hairline/
Call button: Metal
Dimensions: 4.7 (W) × 4.7 (H) × 2.3 (D)in
Weight: 1.2lbs
Accessory: Box mounting screw (No.6-32UNC × 8) × 4, Box mounting screw (M4 × 25) × 4

RS-170 Substation (Outdoor Vandal-Resistant type)

MAIN FEATURES

- Provides half-duplex communication.
- Heavy-duty brushed stainless steel faceplate, #11 Gauge.
- Vandal resistant call button and speaker plate.
- May be programmed to communicate with a single master station.
- Weather resistant conformal printed circuit board coating.
- Connects to N-8000RS/N-8010RS.
- Mounts in two-gang, 2.25" deep electrical box with adapter ring (supplied by other vendors).
- Up to (16) sixteen RS-1XX Remote Stations can be used per N-8000RS/N-8010RS exchange.

Rated Input: 1W
Rated Impedance: 625Ω (1W/25V)
Internal Speaker: 4cm cone-type
Wiring: Two-core shielded cable
Transmission Range: 0.5km /0.5mm (AWG24)
0.8km /0.65mm (AWG22)
1.3km /0.9mm (AWG19)
Operating Temperatures: 14°F to +122°F (Temperature range not to freeze the speaker and switch)
Finish: Panel: Stainless steel, hairline/
Call button: Metal/
Printed circuit board: weather-resistant coating
Dimensions: 4.7 (W) × 4.7 (H) × 2.3 (D)in
Weight: 1.2lbs
Accessory: Box mounting screw (No.6-32UNC × 8) × 4, Box mounting screw (M4 × 25) × 4

RS-180 Substation (Outdoor Vandal-Resistant type with Control Output)

MAIN FEATURES

OUTDOOR PANIC VANDAL RESISTANT REMOTE SUB-STATION

- Provides half-duplex communication.
- Heavy-duty brushed stainless steel faceplate, #11 Gauge.
- Vandal resistant call button and speaker plate.
- May be programmed to communicate with a single master station.
- Red Call Assurance LED for ADA-compliance.
- Labeling area for ADA-compliant message.
- Control output - open collector type for external relay control.
  - Open collector circuit is activated when the "Call" button is pressed and stays active until the call is completed.
  - Open collector circuit is typically used to trigger a strobe light at the remote station location to indicate the station is in use. (Strobe light and relay supplied by other vendors.)
  - Open collector circuit is not remote controllable from other devices.
- Weather resistant conformal printed circuit board coating.
- Connects to N-8000RS/N-8010RS.
- Mounts in two-gang, 2.25" deep electrical box with adapter ring (supplied by other vendors).
- Up to (16) sixteen RS-1XO Remote Stations can be used per N-8000RS/N-8010RS exchange.

Rated Input: 1W
Rated Impedance: 625Ω (1W/25V)
Internal Speaker: 4cm cone-type
Control Output: Open collector output: 30V DC, 30mA (The open collector output is kept turned on till the conversation is finished after the call button was pressed.)
Wiring: Two-core shielded cable
Transmission Range: 0.5km /0.5mm (AWG24)
0.8km /0.65mm (AWG22)
1.3km /0.9mm (AWG19)
Operating Temperatures: 14°F to +122°F (Temperature range not to freeze the speaker and switch)
Finish: Panel: Stainless steel, hairline/
Call button: Metal/
Printed circuit board: weather-resistant coating
Dimensions: 4.7 (W) × 4.7 (H) × 2.3 (D)in
Weight: 1.3lbs
Accessory: Box mounting screw (No.6-32UNC × 8) × 4, Box mounting screw (M4 × 25) × 4

Maxmum cable distance (RS-150/160/170/180)

Cable Type	AWG24 (0.02in)	AWG22 (0.03in)	AWG20 (0.03in)
Distance	1640ft	2625ft	4265ft

Q-RS-180BZ Substation (ADA-Compliant Emergency Outdoor type)

MAIN FEATURES

- Braille labeling
- Large easy-access mushroom button
- Contact output for use with emergency lighting or access control systems.
- Works with N-8000RS & N-8010RS exchanges using shielded twisted pair connection.

RS-140
Switch Panel

MAIN FEATURES
- Call button and privacy button with LED Indicators.
- Supports two-way (half-duplex) communication.
- Prevents incoming calls, pages & scans by pushing the privacy switch.
- Private, handset conversation is available using the RS-141.
- Connects to N-8000RS/8010RS using twisted two-core, shielded cable.

Call-In Switch: Momentary
Privacy Switch: Latching
Indicator: When called: Call LED (red) flashing
In conversation: Call LED (red) lit
In privacy: Privacy LED (red) lit
Wiring: Two-core shielded cable
Transmission Range: 0.5km /0.5mm (AWG24),
0.8km /0.65mm (AWG22),1.3km /0.9mm (AWG19)
Operating Temperatures: 32°F to +104°F
Finish: Panel: Stainless steel, hairline
Call-In Switch: Resin, red
Privacy Switch: Resin, white
Dimensions: 2.8 (W) × 4.5 (H) × 1.1 (D)in
Weight: 80g
Accessory: Mounting bracket × 1, Bracket mounting screw (No.6-32UNC) × 18) × 2, Box mounting screw (No.6-32UNC × 30) × 2, Box mounting screw (M4 × 30) × 2
Applicable Box: Flush-mount box: YC-801(option)
Wall-mount box: YC-802(option)

RS-142
Switch Board

MAIN FEATURES
RS-144 PCB KIT VERSION
- Allows configuration with custom housing and switch.
- May be programmed for dual-priority call or call into two different master stations.
- Connects to N-8000RS & N-8010RS exchanges via shielded twisted pair wire and 25V speaker for half-duplex communication with assigned master station.
- Optional RS-141 handset may also be used

Call-in Switch Wiring: 4 cables (for 2 momentary switches)
Wiring: Two-core shielded cable
Transmission Range: 0.5km /0.5mm (AWG24)
0.8km /0.65mm (AWG22)
1.3km /0.9mm (AWG19)
Operating Temperatures: 32°F to +104°F
Weight: 30g

RS-143
Switch Panel

MAIN FEATURES
SINGLE CALL BUTTON PANEL SWITCH
- Connects to N-8000RS & N-8010RS exchanges via shielded twisted pair wire and 25V speaker for half-duplex communication with assigned master station.
- Optional RS-141 handset may also be used.

Call-In Switch: Momentary
Wiring: Two-core shielded cable
Transmission Range: 0.5km /0.5mm (AWG24)
0.8km /0.65mm (AWG22)
1.3km /0.9mm (AWG19)
Operating Temperatures: 32°F to +104°F
Finish: Panel: Stainless steel, hairline
Call-in Switch: Resin, red
Dimensions: 2.8 (W) × 4.5 (H) × 1.1 (D)in
Weight: 80g
Accessory: Mounting bracket × 1, Bracket mounting screw (No.6-32UNC) × 18) × 2, Box mounting screw (No.6-32UNC × 30) × 2, Box mounting screw (M4 × 30) × 2
Applicable Box: Flush-mount box: YC-801(option)
Wall-mount box: YC-802(option)

RS-144
Switch Panel

MAIN FEATURES
DUAL CALL BUTTON PANEL SWITCH
- May be programmed for dual-priority call or call into two different master stations.
- Connects to N-8000RS & N-8010RS exchanges via shielded twisted pair wire and 25V speaker for half-duplex communication with assigned master station.
- Optional RS-141 handset may also be used.

Call-In Switch: Momentary (EMERGENCY, NORMAL)
Wiring: Two-core shielded cable
Transmission Range: 0.5km /0.5mm (AWG24)
0.8km /0.65mm (AWG22)
1.3km /0.9mm (AWG19)
Operating Temperatures: 32°F to +104°F
Finish: Panel: Stainless steel, hairline
Call-In Switch: Resin, red
Privacy Switch (normal): Resin, white
Dimensions: 2.8 (W) × 4.5 (H) × 1.1 (D)in
Weight: 80g
Accessory: Mounting bracket × 1, Bracket mounting screw (No.6-32UNC) × 18) × 2, Box mounting screw (No.6-32UNC × 30) × 2, Box mounting screw (M4 × 30) × 2
Applicable Box: Flush-mount box: YC-801(option)
Wall-mount box: YC-802(option)

RS-141
Option Handset

MAIN FEATURES
- Two-way, half-duplex communication using any 25V wall/ceiling speaker
- Prevents incoming calls by pushing a privacy switch

Handset Receiver: Dynamic type
Handset Transmitter: Electret condenser type
Wiring: Two-core shielded cable
Handset Receiver Volume Control: Side volume, Maximum attenuation level: 12 – 18dB
Operating Temperatures: 32°F to +104°F
Finish: ABS resin, pale white
Dimensions: 4.6 (W) × 8.7 (H) × 2.8 (D)in
Weight: 0.8lbs
Accessory: Box mounting screw (No.6-32UNC × 18) × 4, Box mounting screw (M4 × 25) × 4
Applicable Box: 2-gang electrical box:
YC-302 (option)

4-Wire Type Stations (works with N-8400RS)

N-8410MS
Analog Standard Master Station

MAIN FEATURES

FOUR-WIRE MASTER STATION

- Low-cost analog Master Station operates on 4-wire connection with N-8400RS.
- Complete system can be configured on one exchange with RS-4xx sub stations.

Power Source: 24V DC (supplied from the sub station interface unit N-8400RS)
Current Consumption: Max. 30mA
Wiring Method: 2 set of twisted pair cable
Transmission System: 4 wire baseband transmission system
Signal Level:25dB* (up), 0dB* or less (down)
Speech Method: Hands-free or handset conversation
Audio Frequency Range: 300Hz – 7kHz
Hands-free: Speaker: 0.6W, 8Ω, 5.7cm cone-type/
Mic.: Omni-directional electret condenser microphone
Handset: Receive path: Dynamic type, Send path: Electret condenser microphone/
Handset receiver volume control: Rotary volume, Maximum control level: 12 – 18dB

Line Connecting Terminal: RJ-11 modular jack
Installation Method: Desk/Surface mounted master station (When mounting to the wall, use the optional YC-280.)
Operating Temperature: 32°F to +104°F
Operating Humidity: Under 90% RH (no condensation)
Finish: Body/Handset: ABS resin, gray
Dimensions: 5.8 (W) × 8.2 (H) × 2.8 (D)in (excluding a curl cord section)
Weight: 1.6lbs
Accessory: Connecting cord (6.6ft) × 1
Option: Wall mounting bracket: YC-280

*0dB = 1V

RS-450
Substation (Indoor type)

MAIN FEATURES

ECONOMY INDOOR SUB-STATION

- Provides half-duplex communication.
- Hairline brushed stainless steel faceplate.
- Built-in electret condenser microphone.
- Connects to N-8400RS using two twisted pair cable.

Call-In Switch: Momentary (Emergency call: Press twice within 400ms)
Rated Input: 1W
Internal Speaker: Cone-type
Internal Mic: Electret condenser type
Wiring: Twisted pair cables (2-pair)
Transmission Range: 1km /0.5mm (AWG24),
1.5km /0.65mm (AWG22), 2km /0.9mm (AWG19)

Operating Temperatures: 14°F to +122°F (Temperature range not to freeze the speaker and switch)
Finish: Panel: Stainless steel, hairline
Call Switch: Resin, black
Dimensions: 4.7 (W) × 4.7 (H) × 1.6 (D)in
Weight: 1.1lbs
Accessory: Box mounting screw (No.6-32UNC × 18) × 4, Box mounting screw (M4 × 25) × 4
Applicable Box: 2-gang electrical box: YC-302 (option)

RS-460
Substation (Indoor Vandal-Resistant type)

MAIN FEATURES

- Provides half-duplex communication.
- Heavy-duty brushed stainless steel faceplate.
- Vandal resistant call button and speaker plate.
- Built-in electret condenser microphone.
- Connects to N-8400RS using two twisted pair cable.

Call-In Switch: Momentary (Emergency call: Press twice within 400ms)
Rated Input: 1W
Internal Speaker: Cone-type
Internal Mic: Electret condenser type
Wiring: Twisted pair cables (2-pair)
Transmission Range: 1km /0.5mm (AWG24),
1.5km /0.65mm (AWG22), 2km /0.9mm (AWG19)

Operating Temperatures: 14°F to +122°F (Temperature range not to freeze the speaker and switch)
Finish: Panel: Stainless steel, hairline
Call Switch: Metal, silver
Dimensions: 4.7 (W) × 4.7 (H) × 1.9 (D)in
Weight: 1.2lbs
Accessory: Box mounting screw (No.6-32UNC × 18) × 4, Box mounting screw (M4 × 25) × 4
Applicable Box: 2-gang electrical box: YC-302 (option)

RS-470
Substation (Outdoor Vandal-Resistant type)

MAIN FEATURES

- Provides half-duplex communication.
- Dustproof and waterproof construction (IP54 rating).
- Heavy-duty brushed stainless steel faceplate.
- Vandal resistant call button.
- Weather resistant conformal printed circuit board coating.
- Built-in electret condenser microphone.
- Connects to N-8400RS using two twisted pair cable.

Call-In Switch: Momentary (Emergency call: Press twice within 400ms)
Rated Input: 1W
Internal Speaker: Cone-type
Internal Mic: Electret condenser type
Indicator: When called: Status indicator (red) flashing
In conversation: Status indicator (red) lit

Wiring: Twisted pair cables (2-pair)
Transmission Range: 1km /0.5mm (AWG24)
1.5km /0.65mm (AWG22)
2km /0.9mm (AWG19)
Operating Temperatures: 14°F to +122°F (Temperature range not to freeze the speaker and switch)
Housing Protection: BS EN62262: 2002: IK02 equivalent
Dust/Wether Protection: IP54
Finish: Panel: Stainless steel, hairline
Call Switch: Metal, silver
Circuit board: Weater-resistant coating
Dimensions: 4.7 (W) × 4.7 (H) × 2 (D)in
Weight: 1.3lbs
Accessory: Box mounting screw (No.6-32UNC × 18) × 4, Box mounting screw (M4 × 25) × 4
Applicable Box: 2-gang electrical box: YC-302 (option)

RS-480
Substation (Outdoor Vandal-Resistant type with Control Output)

MAIN FEATURES

OUTDOOR PANIC VANDAL RESISTANT REMOTE SUB-STATION

- Provides half-duplex communication.
- Dustproof and waterproof construction (IP54 rating).
- Heavy-duty brushed stainless steel faceplate.
- Red vandal resistant call button.
- Control output - open collector type for external relay control.
- Weather resistant conformal printed circuit board coating.
- Built-in electret condenser microphone.
- Connects to N-8400RS using two twisted pair cable.

Call-In Switch: Momentary (Emergency call: Press twice within 400ms)
Rated Input: 1W
Internal Speaker: Cone-type
Internal Mic: Electret condenser type

Indicator: When called: Status indicator (red) flashing
In conversation: Status indicator (red) lit
Wiring: Twisted pair cables (2-pair)
Transmission Range: 1km /0.5mm (AWG24)
1.5km /0.65mm (AWG22)
2km /0.9mm (AWG19)
Operating Temperatures: 14°F to +122°F (Temperature range not to freeze the speaker and switch)
Housing Protection: BS EN62262: 2002: IK02 equivalent
Dust/Wether Protection: IP54
Finish: Panel: Stainless steel, hairline
Call Switch: Metal, silver
Circuit board: Weater-resistant coating
Dimensions: 4.7 (W) × 4.7 (H) × 2 (D)in
Weight: 1.3lbs
Accessory: Box mounting screw (No.6-32UNC × 18) × 4, Box mounting screw (M4 × 25) × 4
Applicable Box: 2-gang electrical box: YC-302 (option)

RS-481 Option Handset

MAIN FEATURES
- Indoor handset used with RS-480 Substation.
- Overrides speaker connected to RS-140/RS-480 call panel and allows private conversation.

Handset Receiver: Dynamic type
Handset Transmitter: Electret condenser type
Handset Receiver Volume Control: Side volume, Maximum attenuation level: 12 – 18dB
Operating Temperatures: 32°F to +104°F
Finish: ABS resin, pale white
Dimensions: 4.6 (W) × 8.7 (H) × 2.8 (D)in
Weight: 0.8lbs
Accessory: Box mounting screw (No.6-32UNC × 18) × 4, Box mounting screw (M4 × 25) × 4
Applicable Box: 2-gang electrical box: YC-302 (option)

E-7000TB
Terminal Board

Line Capacity: 80 (40 lines)
Line Connection Terminal: Clip terminal
Finish: Panel: Surface-treated steel plate, black, 30% gloss
Dimensions: 19 (W) × 5.2 (H) × 4.3 (D)in
Weight: 5.5lbs
Accessory: Rack mounting screw × 4, Fiber washer × 4, Name plate × 4, Cord clamp × 6

YC-280
Wall Mounting Brackets
for N-8000MS/8010MS/8020MS/8410MS, N-8500MS/8510MS/8600MS.

Finish: Surface-treated steel plate, gray, paint
Dimensions: 4(W) × 5.5(H) × 1.3(D)in

YC-290
Wall Mounting Brackets
for N-8011MS.

Finish: Surface-treated steel plate, gray, paint
Dimensions: 2.5(W) × 5.2(H) × 1.3(D)in

YC-850
Wall Mounting Bracket
for N-8000RS, N-8000DI, N-8000AF, N-8000CO, N-8000AL, N-8010RS, N-8400RS,

Finish: Surface-treated steel plate, black, 30% gloss
Dimensions: 17.8 (W) × 8.7 (H) × 0.4(D)in

YC-251
Surface Mount Back Box
for N-8031MS.

Finish: Surface-treated steel plate, white
Dimensions: 4.9 (W) × 10.2(H) × 2(D)in

YC-241
Flush Mount Back Box
for N-8031MS.

Finish: Colored chrome painting
Dimensions: 10.2(W) × 4.7(H) × 2.6(D)in

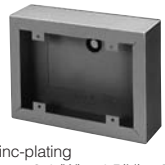
YC-150
Flush Mount Back Box
for N-8050DS/8540DS/8640DS/8650DS.

Finish: Zinc-plating
Dimensions: 7.2 (W) × 4.7(H) × 2.2(D)in

AD-1215P
AC Adapter
for N-8500MS. N-8510MS, N-8540DS, N-8600MS, N-8640DS, N-8650DS and N-8640SB.

Power Req.: 100 – 240V AC, 50/60Hz
Cord Length: 6ft

YS-13A
Surface Mount Back Box
for N-8050DS, N-8540DS, B-8640DS and N-8650DS.



Finish: Zinc-plating
Dimensions: 6.4 (W) × 4.5(H) × 2.3 (D)in

YC-281
Flush Mount Back Box
for N-8033MS.

Finish: Surface-treated steel plate white
Dimensions: 10.2(W) × 4.7(H) × 2.2(D)in

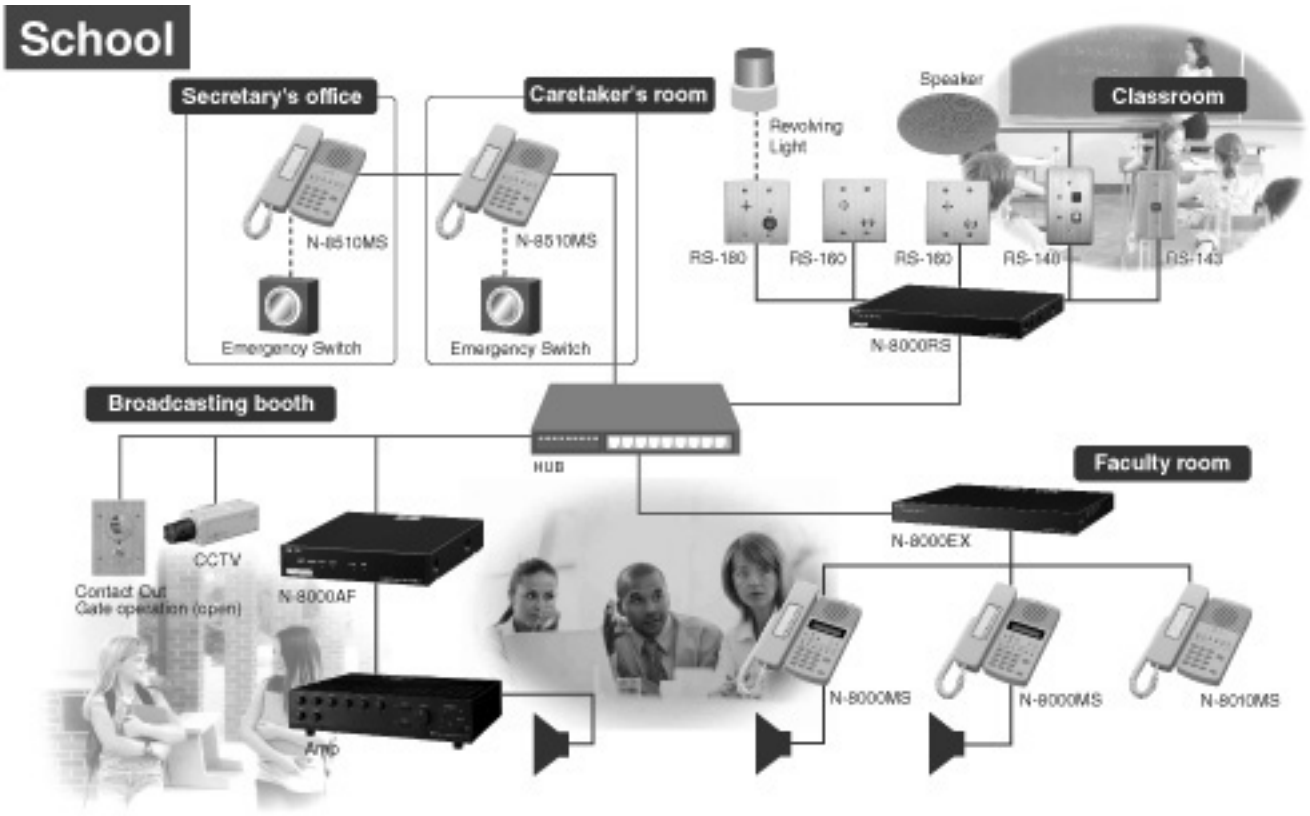
YC-801
Flush Mount Back Box
for RS-140/143/144.

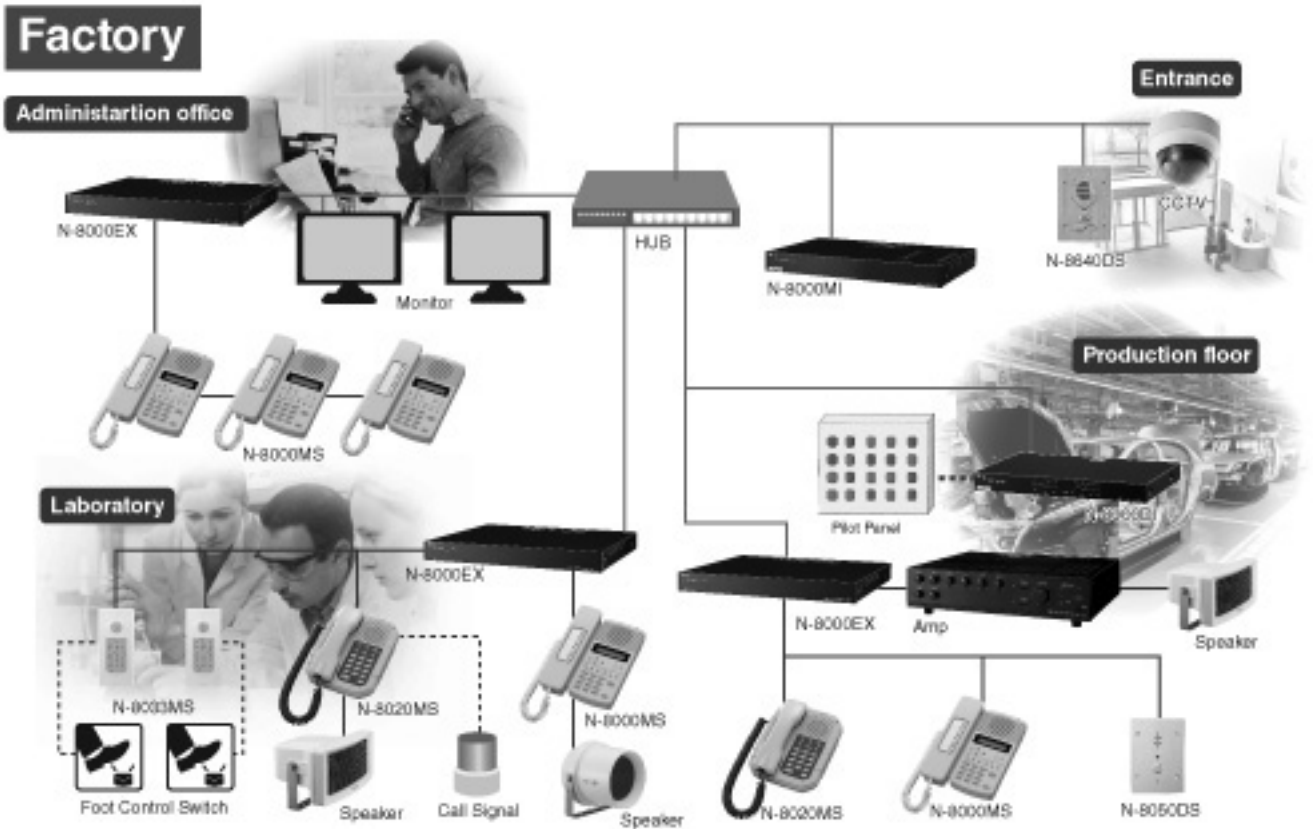
Finish: Colored chrome painting
Dimensions: 2.8(W) × 4.7(H) × 2.2(D)in

YC-802
Surface Mount Back Box
for RS-140/43/144.

Finish: Surface-treated steel plate, white
Dimensions: 2.2(W) × 4.9(H) × 2(D)in

System Image





Classroom Sound Systems

The new **Scholastic & Academy Series-based Classroom Sound Systems** are designed to be easy to specify, order and install. One model number gets you everything you need to achieve high-quality, reliable classroom sound and voice-lift. TOA **Scholastic & Academy Series** classroom systems help students learn better and allows teachers to communicate with less effort. The **Scholastic Series** provides basic functionality with ample power, excellent intelligibility and even coverage throughout the classroom. The **Academy Series** provides all the same capabilities as the basic system, but with added functionality, inputs and power.

MAIN FEATURES
- Mixer/Amplifiers
- 3 input or 5 Input Models
- Wall-mount speakers or Ceiling-mount speaker
- Teacher's lanyard mic or Teacher's plus student's mics
- Several options to suit various needs

APPLICATIONS
- Schools
- College Lecture Rooms
- Corporate Boardrooms
- Conference Centers

Scholastic Series Kit #	SCK-W22010-30	SCK-W22010-33	SCK-C22022-30	SCK-C22022-33
Mixer/amp	BG-220 Mixer/amp	BG-220 Mixer/amp	BG-220 Mixer/amp	BG-220 Mixer/amp
Speakers	F-1000BT Wall-mount Speakers x2	F-1000BT Wall-mount Speakers x2	F-2322C Ceiling Speaker	F-2322C Ceiling Speaker
Tuner	IR-702T Infrared Tuner	IR-702T Infrared Tuner	IR-702T Infrared Tuner	IR-702T Infrared Tuner
Mic Transmitter	IR-300M IR Lavaliere Mic/Transmitter	IR-200M Handheld IR Mic/Transmitter IR-300M IR Lavaliere Mic/Transmitter	IR-300M IR Lavaliere Mic/Transmitter	IR-200M Handheld IR Mic/Transmitter IR-300M IR Lavaliere Mic/Transmitter
Cables	25' Coax Cables x2 50' speaker cables	25' Coax Cables x2 50' speaker cables	25' Coax Cables x2 50' speaker cables	25' Coax Cables x2 50' speaker cables
Accessories	IR-520R IR Sensors x2 IR-200BC Battery Charger IR-200BT Rechargeable NiMH Battery	IR-520R IR Sensors x2 IR-200BC Battery Charger IR-200BT Rechargeable NiMH Battery	IR-520R IR Sensors x2 IR-200BC Battery Charger IR-200BT Rechargeable NiMH Battery	IR-520R IR Sensors x2 IR-200BC Battery Charger IR-200BT Rechargeable NiMH Battery

Academy Series Kit #	ACK-W33513-30	ACK-W33513-33	ACK-C33522-30	ACK-C33522-33
Mixer/amp	BG-2035 Mixer/amp	BG-2035 Mixer/amp	BG-2035 Mixer/amp	BG-2035 Mixer/amp
Speakers	F-1300BT Wall-mount Speakers x2	F-1300BT Wall-mount Speakers x2	F-2322C Ceiling Speaker	F-2322C Ceiling Speaker
Tuner	IR-702T Infrared Tuner	IR-702T Infrared Tuner	IR-702T Infrared Tuner	IR-702T Infrared Tuner
Mics	IR-300M IR Lavaliere Mic/Transmitter	IR-200M Handheld IR Mic/Transmitter IR-300M IR Lavaliere Mic/Transmitter	IR-300M IR Lavaliere Mic/Transmitter	IR-200M Handheld IR Mic/Transmitter IR-300M IR Lavaliere Mic/Transmitter
Cables	25' Coax Cables x2 50' speaker cables	25' Coax Cables x2 50' speaker cables	25' Coax Cables x2 50' speaker cables	25' Coax Cables x2 50' speaker cables
Accessories	IR-520R IR Sensors x2 IR-200BC Battery Charger IR-200BT Rechargeable NiMH Battery	IR-520R IR Sensors x2 IR-200BC Battery Charger IR-200BT Rechargeable NiMH Battery	IR-520R IR Sensors x2 IR-200BC Battery Charger IR-200BT Rechargeable NiMH Battery	IR-520R IR Sensors x2 IR-200BC Battery Charger IR-200BT Rechargeable NiMH Battery

House of Worship System Packages

The **TOA Prophet, Chorus & Congregation House Of Worship System Packages** are developed to offer the ultimate in cost-effective and easy-to-use sound reinforcement, designed specifically for smaller churches. These systems are built around the ground-breaking **M-633D** and **D-901 Digital Mic/Line Mixers** and the **DA Series Digital Power Amplifiers**, along with our **Type H** & **Type S Slim Line Arrays** and the extremely popular **HX-5 Variable Dispersion Loudspeaker**.

PROSYS-1L / PROSYS-1S
PROPHET SYSTEM
Most cost-effective solution. Designed for speech & light music in churches < 250 seats. System includes:
- (1) M-633D Digital Mic/Line Mixer w/ FBS & ARC
- (1) DA-250D Digital 2 Channel Power Amplifier
- (2) SR-H2S (S version) or SR-H2L (Long throw version) Slim Line Array Loudspeakers
- (2) SR-WB3 Wall brackets
- (1) EM-800 Gooseneck Microphone
- (1) ST-800 Weighted Base for EM-800
- (1) 100' 14 ga speaker cable
- (2) 3' audio cables
- (1) 25' XLR Mic cable

CHOSYS-2L / CHOSYS-2S
CHORUS SYSTEM
Wider response with more power & distance coverage. For speech & music in churches 250-500 seats. System includes:
- (1) M-633D Digital Mic/Line Mixer w/ FBS & ARC
- (1) DA-250F Digital 4-Channel Power Amplifier (Each pair or DA-250F channels should be bridged for a 500W @ 8Ω output per pair.)
- (2) SR-S4L (Long-throw) or SR-S4S (Short-throw) Slim Line Array Loudspeakers
- (1) EM-800 Gooseneck Microphone
- (1) ST-800 Weighted Base for EM-800
- (2) SR-TB4 Tilt Wall brackets
- (1) 100' 14 ga. speaker cable
- (2) 3' audio cables
- (1) 25' XLR Mic cable

CONSYS-3B / CONSYS-3W
CONGREGATION SYSTEM
Expandable, Higher powered system with more comprehensive mixer control. Speech & music for churches 500 - 800 seats. System includes:
- (1) D-901 Digital Mic/Line Mixer Frame
- (3) D-921F 2-channel (XLR) Mic/Line Input Modules
- (1) D-971E 4-channel (Phoenix) Line Output Module
- (1) DA-550F Digital 4-Channel Power Amplifier
- (4) HX-5 (available in Black or white) Variable Dispersion Loud speakers
- (2) HY-CN1W/B
- (2) HY-WM2W/B
- (1) EM-700 Boundary Mic
- (2) 100' 14 ga. speaker cables
- (2) 3' audio cables
- (1) 25' XLR mic cable

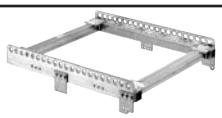
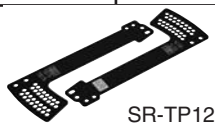
*All TOA HOW packages may also be expanded/augmented with a number of available options, including additional speakers, wired & wireless microphones, signal processing and speaker mounts.

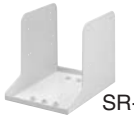
Speaker Mounting Accessories Set-Up Chart

Speakers	Wide-Dispersion Box Speakers			
Installation Configurations	**F-1000BT** **F-1300BT**	**F-1000WT** **F-1300WT**	**F-1000BTWP** **F-1300BTWP**	**F-1000W/TWP** **F-1300WTWP**
Cluster Bracket	HY-CL10B			
Ceiling Mounting Bracket	HY-CM10B	HY-CM10W	HY-CM10B	HY-CM10W
Board Hanger Bracket	HY-BH10B			
Pole Mounting Bracket	YS-60B			

Speakers	Wide-Dispersion Box Speakers			
Installation Configurations	**F-2000BT**	**F-2000WT**	**F-2000BT-WP**	**F-2000WT-WP**
Cluster Bracket	HY-CL20B			
Ceiling Mounting Bracket	HY-CM20B	HY-CM20W	HY-CM20B	HY-CM20W
Pole Mounting Bracket	SP-131	YS-60B		

Speaker Mounting Accessories Set-Up Chart

Speakers	Line Array Speakers Type A	
Installation Configurations	Indoor Use SR-A12L/SR-A12S/SR-A18B 	Outdoor Use SR-A12LWP/SR-A12SWP
Rigging Frame	 SR-RF12	 SR-RF12WP
Tilt Joint Plate	 SR-TP12	

Speakers	Line Array Speakers Type S			
	SR-S4L	SR-S4LWP	SR-S4S	SR-S4SWP
Installation Configurations				
Extension Plate	 SR-EP4	 SR-EP4WP	 SR-EP4	 SR-EP4WP
Wall Tilt Bracket	 SR-TB4	 SR-TB4WP	 SR-TB4	 SR-TB4WP
Wall Mounting Bracket	 SR-WB4	 SR-WB4WP	 SR-WB4	 SR-WB4WP
Stand Adapter	 SR-SA4			
Flying Bracket	 SR-FB4			
Floor Stand	 SR-FS4			
Protection Pad	 SR-PP4			
Matching Transformer	 MT-S0601			

Speaker Mounting Accessories Set-Up Chart

Speakers	Line Array Speakers Type C	
Installation Configurations	Indoor Use SR-C8L/SR-C8S/SR-C15B	Outdoor Use SR-C8LWP / SR-C8SWP / SR-C15BWP
Rigging Frame	SR-RF8	SR-RF8WP
Cluster Bracket	SR-CL8	
Rigging Support Bracket	SR-SB8	
Tilt Joint Plate	SR-TP8	

Speakers	Line Array Speakers Type H			
Installation Configurations	SR-H2L	SR-H2S	SR-H3L	SR-H3S
Extension Plate	SR-EP3		SR-EP3	
Wall Mount Bracket	SR-WB3			
Wall Tilt Mount Bracket	SR-TB3			
Flying Bracket	SR-FB3			
Speaker Stand Adapter / Matching Transformer	SR-SA3 Speaker Stand Adapter	MT-S0301 Matching Transformer		

Horn Speakers	
Installation Configurations	SC-610/SC-610T; SC-615/SC-615T; SC-630/SC-630T; SC-651
Swivel Bracket	YS-151S
Pole Mounting Brackets	SP-131 YS-60B

Speaker Mounting Accessories Set-Up Chart

Speakers	Compact Array Speakers (HX-5 Series)					
Installation Configurations	HX-5B	HX-5W	HX-5B-WP	HX-5W-WP	FB-120B	FB-120W
Rigging Frame	HY-PF1B	HY-PF1W	HY-PF1WP		HY-PF1B	HY-PF1W
Ceiling Mounting Bracket	HY-CW1B	HY-CW1W	HY-CW1WP			
Mounting Bracket	HY-WM1B HY-WM2B	HY-WM1W HY-WM2W	HY-WM1WP	HY-WM2WP		
Extension Bracket	HY-CN1B	HY-CN1W	HY-CN1B-WP	HY-CN1W-WP		
Speaker Stand Adapter	HY-ST1					
Matching Transformer	MT-200					

Speakers	Interior Design Speakers			
Installation Configurations	H-1 EX	H-2 EX H-2WP EX	H-3 EX H-3WP EX	HB-1
Ceiling Mount Bracket Matching Transformer	Ceiling Mount Bracket HY-H1			Matching Trans-former MT-S0601
Equalization Modules (see installation manual for details)	E-04R	E-05R	E-06RB	E-07R

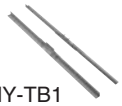
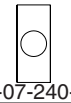
Speaker Mounting Accessories Set-Up Chart

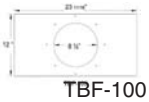
Speakers	Coaxial Array Speakers			
	HS-1200BT	HS-1200WT	HS-1500BT	HS-1500WT
Installation Configurations				
Wall/Ceiling Mount Bracket Vertical Installation	HY-1200VB	HY-1200VW	HY-1500VB	HY-1500VW
Wall/Ceiling Mount Bracket Horizontal Installation	HY-1200HB	HY-1200HW	HY-1500HB	HY-1500HW
Ceiling Mount Bracket	HY-C0801		HY-C0801W	
Wall Mount Bracket	HY-W0801		HY-W0801W	

Speakers	Surface Speakers
	BS-1030B BS-1030W
Installation Configurations	
Ceiling Mounting Bracket	SP-410
Wall Mounting Bracket	SP-420

Speakers	Subwoofer
	FB-120
Installation Configurations	
Low-Pass Filter Module	E-07S
Matching Transformer	MT-S0601

Speaker Mounting Accessories Set-Up Chart

Speakers	Ceiling Speakers - F Series					
Installation Configurations	**F-122CU F-122CU2**	**F-1522SC**	**F-2322C F-2322CU2**	**F-2352C F-2352CU2**	**F-2352SC**	**F-2852C F-2852CU2**
Tile Support Rails	 HY-TB1		HY-TB1 *Note: F-2352SC: When using the TB-F100 the HY-RR2 is required. Supplied with CU2 versions.*			
Ceiling Reinforcement Ring	HY-RR2	HY-RR1	HY-RR2			
Trim Ring	HY-TR1		HY-TR1 *Note: F-2352SC: When using the HY-TR1 the HY-RR2 is required. Supplied with CU2 versions.*			
Black (Suspension) Back Can	HY-BC1		HY-BC1			
White (Suspension) Back Can	Q-HY-BC1W		Q-HY-BC1W			
Shallow Back Can *(Allows the F-2352SC to be plenum rated)*					Q-HY-BC2	
Surface Mount Bracket	HY-AH1		HY-AH1 *Note: F-2352SC: When using the HY-AH1 the HY-RR2 is required. Supplied with CU2 versions.*			
C2 Version Tile Bridge *(2 pcs/pkg)*	507-07-239-50		507-07-239-50			 507-07-240-30
Equalization Module	E-03R					

Speakers	Ceiling Speakers - PC Series
Installation Configurations	**PC-580RU / PC-580RVU**
Flush Mount Back Box	HY-BC580U
Tile Bridge	 TBF-100

Amplifier Selection Guide

Model Number	Power	Inputs				Outputs							Rack Ears	Page
		Mic	Aux	Tel	Module	70V	25V	Record / Bridge / Line	Pre-amp	4 ohm	8 ohm	MOH		
A-2240	240W	2	2	1		Yes	Yes			Yes				22
A-706	60W	6 (Mic or Line)	2	1*	1 (900 Series)	Yes	Yes	Yes	Yes	Yes		Optional	Optional	23
A-712	120W													
A-724	240W													
A-903MK2	30W	8 module slots			8 (900 Series)	Yes	Yes	Yes	Yes	Yes	Yes	Optional	Optional	24
A-906MK2	60W													
A-912MK2	120W													
P-906MK2	60W		1		1 (900 Series)	Yes	Yes			Yes	Yes	Optional	Optional	37
P-912MK2	120w													
P-924MK2	240W													
W-906A	60W	6 module slots			6 (900 Series)	Yes	Yes	Yes		Yes	Yes	Optional	No	25
W-912A	120W													
AV-20D	20W x 2		3					Yes		Yes			Optional	36
BA-235	35W		1			Yes	Yes	Yes		Yes			Optional	35
BA-260	60W													
BG-220	20W	1	2 (3)**			Yes	Yes	Yes		Yes		Yes	Optional	20
BG-235	35W													
BG-2035	35W	1	2 (3)**	1	1 (900 Series)	Yes	Yes	Yes		Yes		Yes	Optional	21
BG-2060	60W													
BG-2120	120W													
A-9060DHM2	60W x 2	4 dual module slots	4 dual module slots	1	8 (9000 Series)	Yes		3 dual module slots	Yes			Yes	Yes	29
A-9120DHM2	120W x 2													
A-9060SM2	60W						Yes			Yes	Yes			
A-9120SM2	120W						Yes			Yes	Yes			
A-9240SHM2	240W													
P-9060DH	60W x 2		2			Yes							Yes	38
P-9120DH	120W x 2													
CA-115	15W	2	1							Yes	Yes		No	34
CA-130	30W													
CA-160	60W													
DA-250F	See DA power output chart below		4							Yes	Yes		Yes	39
DA-250FH			4			Yes								
DA-250D			2							Yes	Yes			
DA-250DH			2			Yes								
DA-500F-HL			4			Yes				Yes	Yes			
DA-550F			4							Yes	Yes			

*Transformer-Isolation for Telephone Paging Applications (Input #1); ** Selectable

DA AMPLIFIER POWER OUTPUT CHART	
MODEL	**POWER OUTPUT**
DA-250D	2x 250W (4 ohms) 2x 170W (8 ohms) 1x 500W bridged (8 ohms)
DA-250DH	2x 250W (70V) 1x 500W bridged (140V)
DA-250F	4x 250W (4 ohms) 4x 170W (8 ohms) 2x 500W bridged (8 ohms)
DA-250FH	4x 250W (70V) 2x 500W bridged (140V)
DA-500F-HL	4x 500W (70V) 2x 1000W bridged (140V) 4x 550W (8 ohm) 4x 100W (4 ohms) 2x 1100W (16 ohms)
DA-550F	4x 550W (4 ohms) 4x 350W (8 ohms) 2x 1100W bridged (8 ohms)

List of UL Safety Certified Models

A

A-706
A-712
A-724
A-2240
A-903MK2
A-9060DHM2
A-9060SM2
A-906MK2
A-9120DHM2
A-9120SM2
A-912MK2
A-9240SHM2
AD-246
AD-0910
AD-1215P
AD-5000-2
AD-5000-6
AV-20D

B

BA-235
BA-260
BC-900
BG-220
BG-235
BG-2035
BG-2060
BG-2120

D

D-2000AD1
D-2000CB
D-2000DA1
D-2008SP
D-901
D-911
D-921E
D-921F
D-922E
D-922F
D-923AE
D-936R
D-971E
D-971M
D-971R
D-972AE
D-981
D-983
D-984VC
DA-250D
DA-250F
DA-250FH
DA-500F-HL
DA-500F
DP-K1
DP-L2
DP-SP3

E

E-1231
E-232

I

IR-802T
IR-820SP

M

M-243
M-633D
M-864D
M-900MK2
M-9000MK2
MP-1216

N

N-8000AF
N-8000AL
N-8000CO
N-8000DI
N-8000EX
N-8000MI
N-8000MS
N-8000RS
N-8010EX
N-8010MS
N-8010RS
N-8011MS
N-8020MS
N-8031MS
N-8033MS
N-8050DS
N-8400RS
N-8410MS

P

P-9060DH
P-906MK2
P-9120DH
P-912MK2

R

RS-140
RS-141
RS-143
RS-144
RS-150
RS-160
RS-170
RS-180
RS-191
RS-450
RS-460
RS-470
RS-480
RS-481

T

TS-770

V

VM-3240E
VM-3240VA
VX-2000DS

W

W-906A
W-912A
WD-4800

List of UL2043 Certified (Plenum Rated) Models

AV-20D
IR-820SP
PC-580RU (when installed with the back can HY-BC580)
PC-580RVU (when installed with the back can HY-BC580)
F-122CU
F-122CU2
F-2322C
F-2322CU2
F-2352C
F-2352CU2
F-2852C
F-2852CU2

List of UL1480 UUMW Certified Speakers

F-122CU2
PC-580RU
PC-580RVU

UL1480 UUMW is the code for speakers for Fire Protection Signaling System, which allows for the use in Mass Notification Systems.

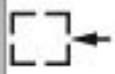
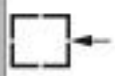
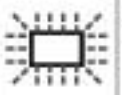
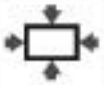
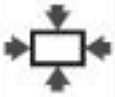
IP Grade Panel

What is IP standard?
This standard provides a system for classifying the degrees of protection provided by the enclosures of electrical equipment under the International Electrotechnical Commission (IEC) publication 529.

The type of protection covered by this system of classification is as follows.

a) Protection of persons against contact with or approach to live parts and against contact with moving parts inside the enclosure and protection of the equipment against ingress of solid foreign bodies.

b) Protection of the equipment inside the enclosure against harmful ingress of water.

1st Numeral: Protection against solid foreign objects			2nd Numeral: Protection against ingress of water		
0		Non-protected	0		Non-protected
1		Protected against solid foreign objects of 50mm ø and greater.	1		Protected against vertically falling water drops.
2		Protected against solid foreign objects of 12.5mm ø and greater.	2		Protected against vertically falling water drops when enclosure tilted up to 15°.
3		Protected against solid foreign objects of 2.5mm ø and greater.	3		Protected against splaying water.
4		Protected against solid foreign objects of 1.0mm ø and greater.	4		Protected against splashing water.
5		Dust-protected	5		Protected against water jets.
6		Dust-tight	6		Protected against powerful water jets.
X		Not tested	7		Protected against the effects of temporary immersion in water.
			8		Protected against the effects of continuous immersion in water.
			X		Not tested

Model	Description	Page
#		
507-07-239-50	Ceiling Spkr	120
507-07-240-30	Ceiling Spkr	120
A		
A-706	Mixer/Amp.	20
A-712	Mixer/Amp.	20
A-724	Mixer/Amp.	20
A-2240	Mixer/Amp	26
A-903MK2	Modular Mixer/Amp	18
A-9060DHM2	Dig. Mix/Matrix Amp.	10-1
A-9060SM2	Dig. Mix/Matrix Amp.	10-1
A-906MK2	Modular Mixer/Amp	10
A-9120DHM2	Dig. Mix/Matrix Amp.	10-1
A-9120SM2	Dig. Mix/Matrix Amp.	10, 12
A-912MK2	Modular Mixer/Amp	18
A-9240SHM2	Dig. Mix/Matrix Amp.	10, 12
AD-0910	IR Conf. Sys.	74, 77
AD-246	AC Adapter	16, 27, 37, 42-4
AD-1215P	AC Adapter	104, 105, 111
AD-5000-2	AC Adapter	85
AD-5000-6	AC Adapter	85
AN-001T	9000 Modules	13, 16
AN-9001	9000 Modules	16-7
AV-20D	Amplifier	30
ACK-C33522-30	.Classroom	113
ACK-C33522-33	.Classroom	113
ACK-W33513-30	.Classroom	113
ACK-W33513-33	.Classroom	113
B		
B-01F	900 Modules	23
B-01S	900 Modules	17, 23
B-11S	900 Modules	17, 23
B-21S	900 Modules	23
B-41S	900 Modules	23
BA-235	Mixer/Amp.	21
BA-260	Mixer/Amp.	21
BC-900UL	IR Conf. Sys.	77
BC-5000-2PS	Charger	85
BC-5000-6PS	Charger	85
BC-5000-12PS	Charger	85
BG-2035	Mixer/Amp.	22, 113
BG-2060	Mixer/Amp.	22
BG-2120	Mixer/Amp.	22
BG-220	Mixer/Amp.	21, 113
BG-235	Mixer/Amp.	21
BP-900UL	IR Conf. Sys.	77, 74
BS-1030B	Music/Paging Spkr	49, 119
BS-1030W	Music/Paging Spkr	49, 119
BS-1034	Wall Mount Speaker	44
BS-1034S	Wall Mount Speaker	49
BS-678	Public Address Spkr	48
BS-680FC	Public Address Spkr	48
BX-9F	In-Wall Mixer/Amp.	17
BX-9S	In-Wall Mixer/Amp.	17
C		
C-001T	9000 Modules	13
CA-115	Mobile Mixer/Amp	26
CA-130	Mobile Mixer/Amp	26
CA-160	Mobile Mixer/Amp	26
CS-154	Paging Speaker	52
CS-304	Paging Speaker	52
CS-64	Paging Speaker	52
D		
D-001R	9000 Modules	13
D-001T	9000 Modules	13
D-2000AD1	Digital Mixing Sys.	31-2
D-2000CB	Digital Mixing Sys.	31-2
D-2000DA1	Digital Mixing Sys.	31-2
D-2008SP	Digital Mixing Sys.	31, 56-7, 60-1
D-901	Dig. Mod. Mix.	33, 56-7, 60-1, 114
D-911	Digital Mod. Mixer	31, 33
D-921E	Digital Mod. Mix.	2, 4, 31, 34, 39
D-921F	Dig. Mod. Mix.	2, 4, 34, 39, 114
D-922E	Digital Mod. Mix.	2, 4, 31, 34, 39
D-922F	Digital Mod. Mix.	2, 4, 31, 34, 39
D-923AE	Digital Mod. Mixer	31, 35, 39
D-936R	Digital Mod. Mixer	2, 4, 34, 39
D-937SP	Digital Mod. Mixer	39
D-971E	Digital Mod. Mix.	31, 35, 39, 114
D-971M	Digital Mod. Mixer	31, 35, 39
D-971R	Digital Mod. Mixer	31, 35, 39
D-972AE	Digital Mod. Mixer	31, 35, 39
D-981	Digital Mod. Mixer	31, 35, 39
D-983	Digital Mod. Mixer	31, 35, 39
D-984VC	Digital Mod. Mixer	31, 33
DA-250D	Multi-Ch. Amp.	28-9, 114
DA-250DH	Multi-Ch. Amp.	28-9
DA-250F	Multi-Ch. Amp.	28-9, 114
DA-250FH	Multi-Ch. Amp.	28-9
DA-500F-HL	Multi-Ch. Amp.	28-9
DA-550F	Multi-Ch. Amp.	28-9, 114
DM-1200	Wired Mic	93
DM-1300US	Wired Mic	93
DP-K1	Digital Mixer	39
DP-L2	Dig. Amb. Noise Control	41
DP-SP3	Digital Processor	41
DT-930	Radio Tuner	45
E		
E-03R	900 Modules	25, 120
E-04R	900 Modules	24, 118
E-05R	900 Modules	24, 63, 118
E-06R	900 Modules	25, 120
E-07S	900 Modules	24, 117, 120
E-1231	Signal Processor	40
E-232	Signal Processor	40
E-7000TB	Intercom	111
EM-600	Boundary Mic	94
EM-700	Boundary Mic	94, 114
EM-800	Boundary Mic	94, 114
ER-1000	Personal PA Sys.	99
ER-1203	Megaphone	95, 97
ER-1206	Megaphone	95, 97
ER-1206S	Megaphone	95, 97
ER-1206W	Megaphone	95, 97
ER-1215	Megaphone	96
ER-1215S	Megaphone	97
ER-2215	Megaphone	97
ER-2215W	Megaphone	97
ER-2230W	Megaphone	98
ER-2930W	Megaphone	98
ER-3215	Megaphone	97
ER-520	Megaphone	96
ER-520S	Megaphone	96
ER-520W	Megaphone	96
ER-604W	Megaphone	99
EV-20R	Digital Messaging	44
F		
F-122CU	Ceiling Spkr	25, 69-70, 120
F-122CU2	Ceiling Spkr	69-70, 120
F-1000BT	Box Speaker	66, 115
F-1000WT	Box Speaker	66, 115
F-1000BTWP	Box Speaker	66, 115
F-1000WTWP	Box Speaker	66, 115
F-1300BT	Box Speaker	67, 113, 115
F-1300BTWP	Box Speaker	67, 115
F-1300WT	Box Speaker	67, 113, 115
F-1300WTWP	Box Speaker	67, 115
F-1522SC	Ceiling Spkr	69-70, 120
F-2000BT	Box Speaker	68, 115
F-2000BT-WP	Box Speaker	68, 115
F-2000WT	Box Speaker	68, 115
F-2000WT-WP	Box Speaker	68, 115
F-2322C	Ceiling Spkr	69-70, 113, 120
F-2322CU2	Ceiling Spkr	69-70, 120
F-2352C	Ceiling Spkr	69-70, 120
F-2352CU2	Ceiling Spkr	69-70, 120
F-2352SC	Ceiling Spkr	69-70, 120
F-2852C	Ceiling Spkr	69-70, 120
F-2852CU2	Ceiling Spkr	69-70, 120
FB-120B	Subwoofer	62, 66, 118-9
FB-120W	Subwoofer	24, 62, 66-8, 118
H		
H-1 EX	Int. Design Spkr.	24, 63, 65, 118
H-2 EX	Int. Design Spkr.	24, 63, 65, 118
H-2WP EX	Int. Design Spkr.	24, 63, 65, 118
H-3 EX	Int. Design Spkr.	25, 64-5, 118
H-3WP EX	Int. Design Spkr.	25, 64-5, 118
HB-1	Subwoofer	24, 63-6, 118
HS-1200BT	Coaxial Array Spkr	72, 119
HS-1200WT	Coaxial Array Spkr	72, 119
HS-1500BT	Coaxial Array Spkr	72, 119
HS-1500WT	Coaxial Array Spkr	72, 119
HX-5B	Cmpact Array Spkr	62, 114, 118
HX-5B-WP	Compact Array Spkr	62, 118
HX-5W	Cmpact Array Spkr	62, 114, 118
HX-5W-WP	Compact Array Spkr	62, 118
HY-1200HB	Coaxial Array Spkr	118
HY-1200HW	Coaxial Array Spkr	118
HY-1200VB	Coaxial Array Spkr	118
HY-1200VW	Coaxial Array Spkr	118
HY-1500HB	Coaxial Array Spkr	118
HY-1500HW	Coaxial Array Spkr	118
HY-1500VB	Coaxial Array Spkr	118
HY-1500VW	Coaxial Array Spkr	118
HY-AH1	Ceiling Spkr	70-1, 120
HY-BC1	Ceiling Spkr	70-1, 120
HY-BC580U	Ceiling Spkr	47, 120
HY-BH10B	Box Speaker	66-7
HY-C0801	Coaxial Array Spkr	119
HY-C0801W	Coaxial Array Spkr	119
HY-CL10B	Box Speaker	66-7, 115
HY-CL20B	Box Speaker	68, 115
HY-CM10B	Box Speaker	66-7, 115
HY-CM10W	Box Speaker	66-7, 115
HY-CM20B	Box Speaker	68, 115
HY-CM20W	Box Speaker	68, 115
HY-CN1B	Compact Array Spkr	62, 114, 118
HY-CN1B-WP	Compact Array Spkr	62, 118
HY-CN1W	Compact Array Spkr	62, 114, 118
HY-CN1W-WP	Compact Array Spkr	62, 118
HY-CW1B	Compact Array Spkr	62, 118
HY-CW1W	Compact Array Spkr	62, 118
HY-CW1WP	Compact Array Spkr	62, 118
HY-H1	Interior Design Spkr.	63, 118
HY-PF1B	Compact Array Spkr	62, 118
HY-PF1W	Compact Array Spkr	62, 118
HY-PF1WP	Compact Array Spkr	62, 118
HY-RR1	Ceiling Spkr	70-1, 120
HY-RR2	Ceiling Spkr	70-1, 120
HY-ST1	Compact Array Spkr	62, 118
HY-TB1	Ceiling Spkr	71, 92, 120
HY-TR1	Ceiling Spkr	70-1, 120
HY-W0801	Coaxial Array Spkr	119
HY-W0801W	Coaxial Array Spkr	119
HY-WM1B	Compact Array Spkr	62, 120
HY-WM1W	Compact Array Spkr	62, 120
HY-WM1WP	Compact Array Spkr	62, 120
HY-WM2B	Compact Array Spkr	62, 116
HY-WM2W	Compact Array Spkr	62, 116
HY-WM2WP	Compact Array Spkr	62, 116
I		
IR-200BC	IR Wireless Mic	89, 113
IR-200BT-2	IR Wireless Mic	89-90, 113
IR-200M	IR Wireless Mic	89, 113
IR-300M	IR Wireless Mic	89, 113
IR-500R	IR Wireless Mic	91
IR-510R	IR Wireless Mic	91
IR-520R	IR Wireless Mic	91, 113
IR-700D	IR Wireless Mic	90
IR-702T	IR Wireless Mic	90, 113
IR-802SP	IR Wireless	92
IR-802T	IR Wireless	92
IT-450	Input Transformer	7, 20, 44
L		
L-01F	900 Modules	23
L-01S	900 Modules	17, 23
L-11S	900 Modules	17, 23
L-41S	900 Modules	23

Model	Description	Page
M		
M-01F	900 Modules	23
M-01M	900 Modules	23
M-01P	900 Modules	23
M-01S	900 Modules	17, 23
M-03P	900 Modules	23
M-11S	900 Modules	17, 23
M-21S	900 Modules	17, 23
M-243	Analog Mixer	38
M-41S	900 Modules	23
M-51F	900 Modules	23
M-51S	900 Modules	23
M-61F	900 Modules	23
M-61S	900 Modules	23
M-633D	Digital Stereo Mixer	38, 114
M-864D	Digital Stereo Mixer	36-7
M-9000M2	Dig. Mix/Matrix Amp.	9, 12
M-900MK2	Mixer Preamplifier	18
MB-1000	Mixer/Amp.	22
MB-15B	Rack Mount Kit	17, 27, 44-5, 84
MB-15B-BK	Rack Mount Brack.	42-3, 92, 102
MB-15B-J.	Rack Mount Bracket	42-3, 102
MB-25B	Rack Mount Kit	18-20
MB-25B-BK	Rack Mount Bracket	21
MB-25B-J.	Rack Mount Bracket	21
MB-35B	Rack Mount Kit	19
MB-AV20PM	Micro Amplifier.	30
MB-AV20RM	Micro Amplifier.	30
MB-DM820	Micro Amplifier.	30
MB-TS900	IR Conf. Sys.	73, 77
MB-WT3	Rack Mount Bracket Kit.	44, 90
MB-WT4	Rack Mount Bracket Kit.	44, 90
ML-11	900 Modules	23
MP-032B	Monitor Panel	45
MP-1216	Monitor Panel	45
MT-200	Compact Array Spkr	62, 118
MT-251H	Multi-Ch. Amp.	29-30
MT-S0301	Matching Transform.	30, 61, 117
MT-S0601	Matching Transformer	60, 64, 116, 118, 119
N		
N-8000AF	IP Intercom	102, 111
N-8000AL	IP Intercom	102, 111
N-8000CO	IP Intercom	102, 111
N-8000DI	IP Intercom	102, 111
N-8000EX	IP Intercom	101, 105
N-8000MI	IP Intercom	101
N-8000MS	IP Intercom	105, 111
N-8000RS	IP Intercom	103, 108-9, 111
N-8010EX	IP Intercom	101, 105
N-8010MS	IP Intercom	105, 111
N-8010RS	IP Intercom	103, 108-9, 111
N-8011MS	IP Intercom	106, 111
N-8020MS	IP Intercom	106, 111
N-8031MS	IP Intercom	106, 111
N-8031SB	IP Intercom	107
N-8033MS	IP Intercom	107, 111
N-8050DS	IP Intercom	107, 111
N-8050SB	IP Intercom	106
N-8400RS	IP Intercom	103, 110-1
N-8410MS	IP Intercom	110-1
N-8510MS	IP Intercom	104, 111
N-8540WP	IP Intercom	105
N-8600MS	IP Intercom	104, 111
N-8640DS	IP Intercom	105, 111
N-8640SB	IP Intercom	104
NX-100	Network Audio	42-3
NX-100S	Network Audio	42-3
P		
P-9060DH	Power Amp.	9
P-906MK2	Single Ch. Amp.	19
P-9120DH	Power Amp.	9
P-912MK2	Single Ch. Amp.	19
P-924MK2	Single Ch. Amp.	19
PC-3CL	Ceiling Spkr.	47
PC-5CL	Ceiling Spkr.	47
PC-580RU	Ceiling Spkr.	47
PC-580RVU	Ceiling Spkr.	47
PE-304.	Pendant Spkr	53
PF-1100.	Perf Vent Panel	44
PJ-304	Projection Spkr	53
PM-222U	Wired Mic	93
PM-660U	Wired Mic	93
PW-1230DB	PA Speakers	46
PW-1230DW	PA Speakers	46
PW-1230SB	PA Speakers	46
PW-1230SW	PA Speakers	46
PW-1430DB	PA Speakers	46
PW-1430DW	PA Speakers	46
PW-1430SB	PA Speakers	46
PW-1430SW	PA Speakers	46
Q		
Q-D-2012AS	Digital Mixing Sys.	32
Q-D-2012C	Digital Mixing Sys.	31-2
Q-EM-77	UHF Wireless Mic	82, 90
Q-HY-BC1W	Ceiling Spkr.	70, 120
Q-HY-BC2	Ceiling Spkr.	69-70, 120
Q-N-8050WP	IP Intercom	107
Q-PE-304-BK	Pendant Spkr	53
Q-RM-9012PS	9000 Modules	17, 27
Q-RS-180BZ	IP Intercom	108
Q-S4.16H.	Trantec	87
Q-S4.16L	Trantec	87
Q-SS-9012PS	9000 Modules	17, 27
R		
RC-001T	9000 Modules	14, 37
RM-200M.	Voice Evac	5, 8
RM-200RJ	Voice Evac	5
RM-200SA	Voice Evac	5, 8
RM-200SF	Voice Evac	4-5, 8
RM-210	Voice Evac	4-5, 8
RM-300MF	Voice Evac	8
RM-320F	Voice Evac	8
RS-140	IP Intercom	109, 111
RS-141	IP Intercom	109
RS-142	IP Intercom	109
RS-143	IP Intercom	109, 111
RS-144	IP Intercom	109, 111
RS-150	IP Intercom	108
RS-160	IP Intercom	108
RS-170	IP Intercom	108
RS-180	IP Intercom	108
RS-191	IP Intercom	107
RS-450	IP Intercom	110
RS-460	IP Intercom	110
RS-470	IP Intercom	110
RS-480	IP Intercom	110-1
RS-481	IP Intercom	111
S		
S-01S.	900 Modules	17, 21
S-02S.	900 Modules	17, 25
S-04S.	900 Modules	25
S-20S.	900 Modules	17, 25
SC-610	Paging Horn	50-1, 117
SC-610T	Paging Horn	50-1, 117
SC-615	Paging Horn	50-1, 117
SC-615T	Paging Horn	50-1, 117
SC-630	Paging Horn	50-1, 117
SC-630T	Paging Horn	50-1, 117
SC-651	Paging Horn	50-1, 117
SP-1100.	Megaphone	95, 97
SP-131.	Box Speaker	51-2, 68, 115, 117
SP-410.	Music/Paging Spkr	49, 119
SP-420.	Music/Paging Spkr	49, 119
SR-A12L	Line Array Spkr	56, 116
SR-A12LWP	Line Array Spkr	56, 116
SR-A12S	Line Array Spkr	56, 116
SR-A12SWP	Line Array Spkr	56, 116
SR-A18B	Line Array Spkr	56, 116
SR-C15B	Line Array Spkr	57, 117
SR-C15BWP	Line Array Spkr	57, 117
SR-C8L	Line Array Spkr	57, 117
SR-C8LWP	Line Array Spkr	57, 117
SR-C8S	Line Array Spkr	57, 117
SR-C8SWP	Line Array Spkr	57, 117
SR-CL8	Line Array Spkr	117
SR-D8-M	Line Array Spkr	58
SR-D8-S	Line Array Spkr	58
SR-D8CL	Line Array Sprk	59
SR-D8CS.	Line Array Spkr	59
SR-D8FB	Line Array Spkr	59
SR-D8EP	Line Array Spkr	59
SR-D8HB.	Line Array Spkr	59
SR-D8WB	Line Array Spkr	59
SR-EP3	Line Array Spkr	61, 117
SR-EP4	Line Array Spkr	60, 116
SR-EP4WP	Line Array Spkr	60, 114
SR-FB3	Line Array Spkr	61, 117
SR-FB4	Line Array Spkr	116
SR-FS4	Line Array Spkr	60, 116
SR-H2L	Line Array Spkr	61, 114, 116
SR-H2S	Line Array Spkr	61, 114, 116
SR-H3L	Line Array Spkr	61, 117
SR-H3S	Line Array Spkr	61, 117
SR-PP4	Line Array Spkr	60, 116
SR-RF12	Line Array Spkr	56, 116
SR-RF12WP	Line Array Spkr	56, 116
SR-RF8	Line Array Spkr	57, 117
SR-RF8WP	Line Array Spkr	57, 117
SR-S4L	Line Array Spkr	60, 114, 116
SR-S4LWP	Line Array Spkr	60, 116
SR-S4S	Line Array Spkr	60, 114, 116
SR-S4SWP	Line Array Spkr	60, 116
SR-SA3	Line Array Spkr	61, 117
SR-SA4	Line Array Spkr	60, 116
SR-SB8	Line Array Spkr	117
SR-TB3	Line Array Spkr	61, 117
SR-TB4	Line Array Spkr	60, 116, 119
SR-TB4WP	Line Array Spkr	60, 116
SR-TP12	Line Array Spkr	116
SR-TP8	Line Array Spkr	57, 117
SR-WB3.	Line Array Spkr	61, 116, 119
SR-WB4.	Line Array Spkr	60, 116
SR-WB4WP.	Line Array Spkr	60, 116
SS-9001.	9000 Modules	16
ST-800.	Wired Mics.	94
SX-200RM	Voice Evac	2, 4
SX-2000AI	Voice Evac	2
SX-2000CI	Voice Evac	3
SX-2000CO	Voice Evac	3
SX-2000SM	Voice Evac	2
SX-2100AO	Voice Evac	3
SCK-C22022-30	.Classroom	114
SCK-C22022-33	.Classroom	114
SCK-W22010-30	.Classroom	114
SCK-W22010-33	.Classroom	114
T		
T-001T.	9000 Modules	14
T-01S.	900 Modules	24
T-02S.	900 Modules	24
T-12S.	900 Modules	24
TS-770.	Conf. System.	78
TS-771.	Conf. System.	78-9
TS-772.	Conf. System.	78-9
TS-773.	Conf. System.	78-9
TS-774.	Conf. System.	78-9
TS-775.	Conf. System.	78-9
TS-800.	IR Conf. Sys.	73
TS-801.	IR Conf. Sys.	74, 76-7
TS-802.	IR Conf. Sys.	74, 76-7
TS-900.	IR Conf. Sys.	73
TS-901.	IR Conf. Sys.	74, 76-7
TS-902.	IR Conf. Sys.	74, 76-7
TS-903.	IR Conf. Sys.	74, 76
TS-904.	IR Conf. Sys.	74, 76
TS-905.	IR Conf. Sys.	76
TS-907.	IR Conf. Sys.	76
TT-104B.	Program Timer	44
TBF-100.	Ceiling Speakers	47, 70, 120

Model Description Page

U

U-01F. . . . . 900 Modules 23
U-01P . . . . . 900 Modules 23
U-01R . . . . . 900 Modules 23
U-01S . . . . . 900 Modules 17, 23
U-03R . . . . . 900 Modules 24
U-03S . . . . . 900 Modules 24
U-11R . . . . . 900 Modules 24
U-11S . . . . . 900 Modules 24
U-12S . . . . . 900 Modules 17, 24
U-13R . . . . . 900 Modules 24
U-13S . . . . . 900 Modules 24
U-14R . . . . . 900 Modules 24
U-21S . . . . . 900 Modules 17, 24
U-43R . . . . . 900 Modules 24
U-43S . . . . . 900 Modules 24
U-61S . . . . . 900 Modules 24

V

V-01S. . . . . 900 Modules 25
VM-3240E . . . . . Voice Evac 7
VM-3240VA . . . . Voice Evac 7
VX-2000DS . . . . Voice Evac 5

W

W-906A . . . . . In-Wall Mixer/Amp. 17, 25
W-912A . . . . . In-Wall Mixer/Amp. 17, 25
WA-1822 . . . . . Meeting Amp. 85
WA-1822C. . . . . Meeting Amp. 85
WB-802 . . . . . IR Wireless 92
WB-5000-2 . . . . Rechargable Battery 85
WD-4800 . . . . . UHF Wireless Mic 684, 88
WE-2 . . . . . 900 Modules 17, 25
WH-4000A. . . . . UHF Wireless Mic . . 81-2, 88, 99
WH-4000H. . . . . UHF Wireless Mic . . 81-2, 88, 99
WH-4000P. . . . . UHF Wireless Mic 82
WH-4000S. . . . . UHF Wireless Mic 82
WM-5225. . . . . UHF Wireless Mic 81, 88
WM-5265. . . . . UHF Wireless Mic 81, 88
WM-5270. . . . . UHF Wireless Mic 81, 88
WM-5325. . . . . UHF Wireless Mic 81, 88
WS-5225 . . . . . UHF Wireless Mic Kit . . . 86, 88
WS-5265 . . . . . UHF Wireless Mic Kit . . . 86, 88
WS-5325H. . . . . UHF Wireless Mic Kit . . . 86, 88
WS-5325M. . . . . UHF Wireless Mic Kit . . . 86, 88
WS-5325U. . . . . UHF Wireless Mic Kit . . . 86, 88
WT-4820 . . . . . UHF Wireless Mic . . . 81, 83, 88
WT-5100 . . . . . UHF Wireless Mic . . . 81, 83, 88
WT-5800 . . . . . UHF Wireless Mic . . 81, 83-4, 88
WT-5805 . . . . . UHF Wireless Mic . . 81, 83-4, 88
WT-5810 . . . . . UHF Wireless Mic . . 81, 83-4, 88
WTU-4800 . . . . . UHF Wireless Mic 83, 85, 88, 98

Y

YA-8. . . . . Monitor Panel 45
YA-920. . . . . Volume Control Cover . . 9, 18-22
YC-150 . . . . . IP Intercom 105, 107, 111
YC-241 . . . . . IP Intercom 106, 111
YC-251 . . . . . IP Intercom 106, 111
YC-280 . . . . . IP Intercom 104-6, 110-1
YC-281 . . . . . IP Intercom 111
YC-290 . . . . . IP Intercom 106, 111
YC-801 . . . . . IP Intercom 109, 111
YC-802 . . . . . IP Intercom 109, 111
YC-850 . . . . . IP Intercom . . 17, 27, 102-3, 111
YC-13A . . . . . IP Intercom 105, 107, 111
YP-E401 . . . . . UHF Wireless Mic 82
YP-E5000 . . . . . UHF Wireless Mic 82
YP-E5300 . . . . . UHF Wireless Mic 81-2, 88
YP-E5310 . . . . . UHF Wireless Mic 81-2, 88
YR-770-10M . . . Conf. System. 78-9
YR-770-2M . . . . Conf. System. 78-9
YS-151S . . . . . Paging Horn 51, 117
YS-60B . . . . . Box Spkr . 51-2, 66, 68, 115, 117
YW-1022Y . . . . . Antenna Dist 76, 90
YW-1024Y . . . . . Antenna Dist 76, 90
YW-4500 . . . . . UHF Wireless Mic 84

Z

ZM-104A . . . . . Impedance Meter 54
ZM-9001 . . . . . 9000 Modules 15
ZM-9002 . . . . . 9000 Modules 15
ZM-9003 . . . . . 9000 Modules 15
ZM-9011 . . . . . 9000 Modules 15, 37
ZM-9012 . . . . . 9000 Modules 16, 37
ZM-9013 . . . . . 9000 Modules 16, 37
ZM-9014 . . . . . 9000 Modules 16, 37
ZP-001T. . . . . 9000 Modules 14

Model Description Page

900 Series Plug-In Module Connection Chart . . 25
N-8000 System Image. 112
NX-100 System Image 42-3
SR-D8 System Example 59
SX-2000 Series System Image 5
TS-770 Series System Image 79
TS-800/900 Series System Images. 75
VM-3000 Series System Image. 8
Amplifier Selection Guide 121
Classroom System Packages 113
Conference System Software 80
EASE Focuse Software. 55
House of Worship System Packages 114
IP Grade Panel 124
Multi-Zone Paging System Image 27
Speaker Mounting Accessories Set-Up Charts 115
Wireless Microphone Selection Guide. 88
List of UL Safety Certified Models 122
List of UL2043 Certified Models 123
List of UL1480 UUMW Certified Speakers . . . 123

CONTACT INFORMATION. . . . . Back Cover

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